

SCREENING SITE INSPECTION REPORT

FOR

STERN RUBBER AND TOOL COMPANY

STAPLES, MINNESOTA

U.S. EPA ID: MND045973419

SS ID: NONE

TDD: F05-9001-057

PAN: FMN0187SA

US EPA RECORDS CENTER REGION 5



420600

APRIL 30, 1991



ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

230 SOUTH DEARBORN ST.

CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:
5HR-11-SSI

Ron Swenson, Supervisor
Site Response Section
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155

Site Name: STERN RUSSER and TOLSON Corp.

Location: STAPLES

U.S. EPA ID#: MINN045973419

Date: MAY 1, 1991

Dear Mr. Swenson:

Attached is a copy of the screening site inspection report (SSIR) which has been prepared for the site listed above. This document is considered to be final and any changes and modifications based on comments made by your agency and the U.S. Environmental Protection Agency (U.S. EPA) during the 30 calendar day comment period have already been incorporated.

Because this is considered to be the final form of this document, this version of the SSIR may be distributed outside of your agency without prior notification and approval of U.S. EPA.

Please remember that the revised estimate of the Hazard Ranking System (HRS) score, which has already been furnished to your agency by FIT is still considered to be predecisional. Therefore, it should not be released. If you have any questions concerning the release of this information, please contact Ms. Jeanne Griffin, of my staff, at (312) 886-3007.

As was previously agreed upon, one set of original photographs for this SSIR has already been sent to your agency enclosed in the draft version of this SSIR. It is your agencies responsibility to see that these photographs are mounted in the photo logs enclosed in the final version of this SSIR. At this point the final version of the SSIR supersedes the draft version and the draft version of this SSIR should be removed from your agency files to ensure that the confidential draft version of this SSIR is not inadvertently released by your staff.

If you have any comments or questions, please contact Bill Messenger at (312) 353-1057.

Sincerely yours,

A handwritten signature in cursive script, reading "Thomas F. Geishecker".

Thomas F. Geishecker
Technical Support Section
Enclosure
cc: Bill Messenger

SIGNATURE PAGE
FOR
SCREENING SITE INSPECTION REPORT
FOR
STERN RUBBER AND TOOL COMPANY
STAPLES, MINNESOTA
U.S. EPA ID: MNDO45973419
SS ID: NONE
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Prepared by: Law E. Nelson Date: 5/1/91
Lawrence E. Nelson
FIT Report Preparer
Ecology and Environment, Inc.

Reviewed by: Karen M. Spangler for KMS Date: 5/1/91
Karen M. Spangler
FIT Unit Manager
Ecology and Environment, Inc.

Approved by: Jerome D. Oskvarek Date: 5/1/91
Jerome D. Oskvarek
FIT Office Manager
Ecology and Environment, Inc.

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1. INTRODUCTION

Ecology and Environment, Inc., Field Investigation Team (FIT) was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a screening site inspection (SSI) of the Stern Rubber and Tool Company (Stern) site under contract number 68-01-7347.

The site was initially discovered by the Minnesota Pollution Control Agency (MPCA) through a hotline complaint that waste solvent had been disposed of in an on-site outfall pond.

The site was evaluated in the form of a preliminary assessment (PA) that was submitted to U.S. EPA. The PA was prepared by Susan Cedarleaf of MPCA and is dated June 19, 1985.

FIT prepared an SSI work plan for the Stern site under technical directive document (TDD) F05-8706-162, issued on June 9, 1987. The SSI work plan was approved by U.S. EPA on January 1, 1990. The SSI of the Stern site was conducted on May 9 and 10, 1990, under TDD F05-9001-057, issued on January 1, 1990.

The FIT SSI included an interview with site representatives, a reconnaissance inspection of the site, and the collection of eight soil/sediment samples and three residential well samples.

The purposes of an SSI have been stated by U.S. EPA in a directive outlining Pre-Remedial Program strategies. The directive states:

All sites will receive a screening SI to 1) collect additional data beyond the PA to enable a more refined preliminary HRS [Hazard Ranking System] score, 2) establish priorities among sites most likely to qualify for the NPL [National Priorities List], and 3) identify the

most critical data requirements for the listing SI step. A screening SI will not have rigorous data quality objectives (DQOs). Based on the refined preliminary HRS score and other technical judgement factors, the site will then either be designated as NFRAP [no further remedial action planned], or carried forward as an NPL listing candidate. A listing SI will not automatically be done on these sites, however. First, they will go through a management evaluation to determine whether they can be addressed by another authority such as RCRA [Resource Conservation and Recovery Act].... Sites that are designated NFRAP or deferred to other statutes are not candidates for a listing SI.

The listing SI will address all the data requirements of the revised HRS using field screening and NPL level DQOs. It may also provide needed data in a format to support remedial investigation work plan development. Only sites that appear to score high enough for listing and that have not been deferred to another authority will receive a listing SI. (U.S. EPA 1988)

U.S. EPA Region V has also instructed FIT to identify sites during the SSI that may require removal action to remediate an immediate human health or environmental threat.

2. SITE BACKGROUND

2.1 INTRODUCTION

This section presents information obtained from SSI work plan preparation, the site representative interview, and the reconnaissance inspection of the site.

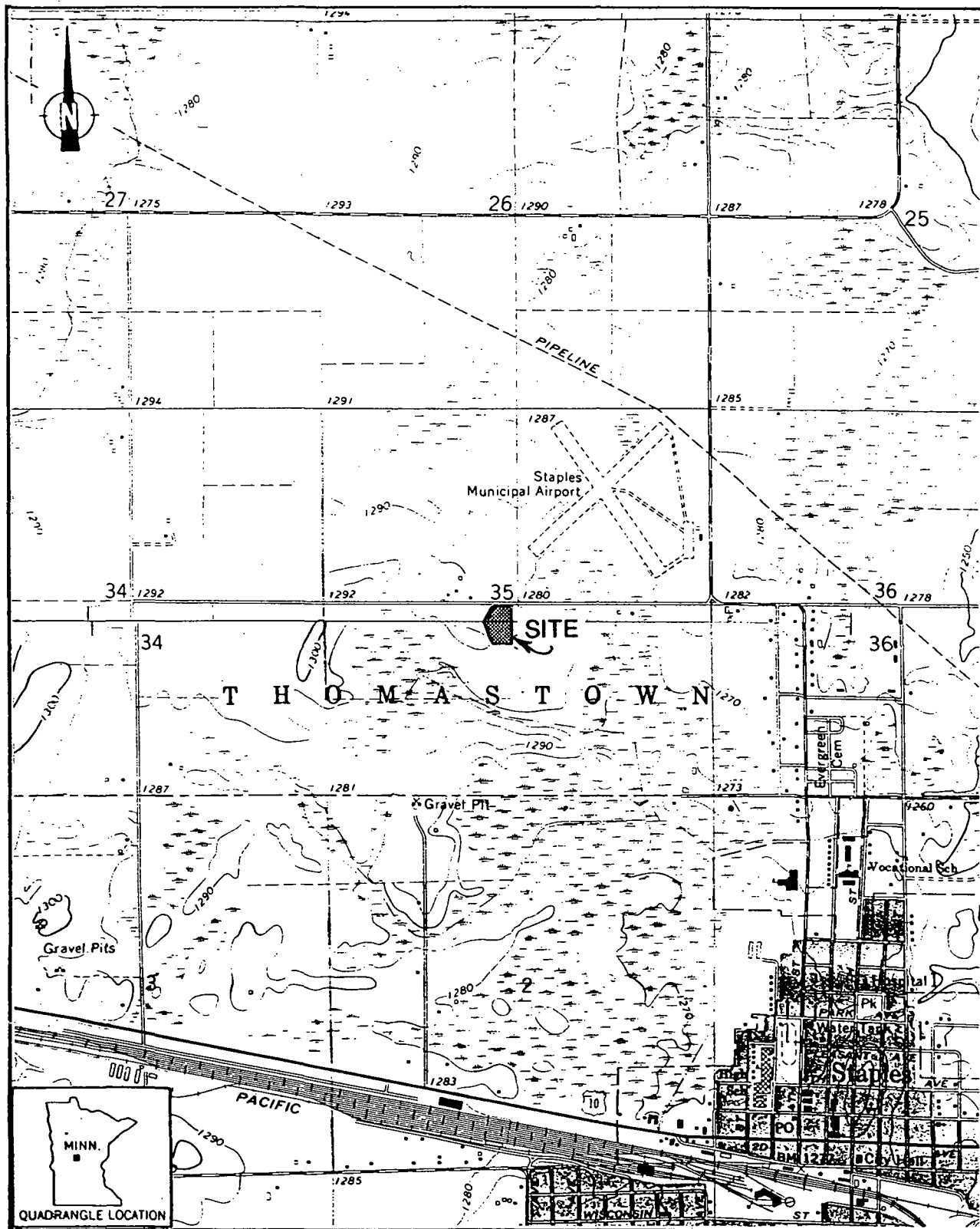
2.2 SITE DESCRIPTION

The Stern site is located on approximately 26 acres of land in Wadena County, approximately 1 mile northwest of Staples, Minnesota, in Staples Airport Industrial Park (see Figure 2-1 for site location). The site is surrounded by a mostly rural area (NE1/4NE1/4SW1/4 sec. 35, T.134N., R.33W.). Staples Airport Industrial Park consists of several companies located within approximately 1/4 mile of the site. Staples Airport is located approximately 1/4 mile northeast of the site.

A 4-mile radius map of the site is provided in Appendix A.

2.3 SITE HISTORY

Stern Rubber and Tool Company operated on-site from 1973 through 1986. The company was owned and operated by Terrel Stern. Before 1973 Stern Rubber and Tool Company was located in Savage, Minnesota. In 1986, American Rubber Products Corporation of LaPorte, Indiana, purchased Stern Rubber and Tool Company. The company currently operates under the name of its parent company. Stern is currently vice president and general manager of American Rubber Products Corporation, Staples Division. Use of the site prior to 1973 is not known (Stern 1990).



SOURCE: USGS, Staples and Staples NE, MN Quadrangles, 7.5 Minute Series, 1966.

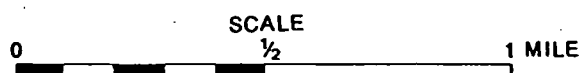


FIGURE 2-1 SITE LOCATION

Although the ownership of the company has changed, production of custom-molded rubber products (e.g., gaskets and grommets) has continued on-site. The company manufactures these products for a variety of customers. Before a custom-molded rubber product can be produced, specifications on the type of rubber required for the product must be determined. Once the type of rubber that will be used during the process is determined, compounds that will meet the product requirements are selected. Combinations of carbon black, natural rubber polymers, clays, colors, sulfur, zinc oxide, and processing oil are blended as a dry mix. The dry mix is warmed and placed in a mold. Heat and pressure are applied to the mold to thermally set or vulcanize the rubber. The rubber is then cooled with water, removed from the mold, and degreased with toluene. To remove excess rubber from the molded product, the product is frozen with liquid nitrogen and tumbled in a 55-gallon drum (Stern 1990).

Previously, excess rubber from the molding process was placed in a pile and burned on-site west of the storage garage. Currently, the excess rubber is disposed of with other company waste in dumpsters and transported by a local disposal company for incineration at a facility in Perham, Minnesota. It is not known when the transition from on-site burning to off-site disposal occurred (Stern 1990).

Waste oils from the molding process are stored on-site in 55-gallon drums. After a period of accumulation, the drums containing waste oil are transported off-site by a waste oil reclaimer (Stern 1990).

Unused toluene is stored on-site in 55-gallon drums in the storage shed. Waste toluene is also stored in 55-gallon drums in the shed and is eventually transported by the manufacturer, Worum Chemical of Wisconsin, and recycled (Stern 1990). The company generates approximately twenty 55-gallon drums of liquid waste containing toluene each year (Johnson 1985).

The manufacturing equipment used is cooled with water that is obtained from an on-site well. This cooling water is noncontact and is discharged, after being used, into an outfall pond located on-site approximately 50 feet south of the main facility buildings (Johnson 1985).

On June 3, 1984, MPCA received a hotline complaint that alleged that waste solvents had been disposed of in the outfall pond (Gries

1985). This complaint prompted an MPCA inspection of the outfall pond. The inspection took place on August 2, 1984. The inspectors did not observe any evidence of a hazardous waste problem. Sampling is not known to have occurred during the inspection (Johnson 1985).

Stern Rubber and Tool Company was again inspected by MPCA on September 24, 1985. The inspection revealed that Stern Rubber and Tool Company was a small quantity generator of hazardous waste. As such, Stern Rubber and Tool Company is required to ship wastes off-site before four to five full drums of waste accumulate on-site (Johnson 1985).

No enforcement action concerning the Stern site is pending.

3. SCREENING SITE INSPECTION PROCEDURES AND FIELD OBSERVATIONS

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3.1 INTRODUCTION

This section outlines procedures and observations of the SSI of the Stern site. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific FIT activities are also provided. The SSI was conducted in accordance with the U.S. EPA-approved work plan with the following exception. One residential well sample was eliminated from the sampling plan because of the limited number of homes using private residential wells in the area of the site.

The U.S. EPA Potential Hazardous Waste Site Inspection Report (Form 2070-13) for the Stern site is provided in Appendix B.

3.2 SITE REPRESENTATIVE INTERVIEW

Karen M. Spangler, FIT team leader, conducted an interview with the following American Rubber Products Corporation personnel: Terrel Stern, General Manager; Nick Willis, Plant Production Manager; Diane Danculovich, Purchasing Department; and David Brabec, Controller. The interview was conducted on May 9, 1990, at 8:05 a.m. at the on-site offices of American Rubber Products Corporation. Lawrence Nelson, of FIT, was also present at the interview. The interview was conducted to gather information that would aid FIT in conducting SSI activities.

3.3 RECONNAISSANCE INSPECTION

Following the site representative interview, on May 9, 1990, FIT conducted a reconnaissance inspection of the Stern site and surrounding

area in accordance with Ecology and Environment, Inc. (E & E), health and safety guidelines. The reconnaissance inspection began at 9:40 a.m. and included a walk-through of the site to determine appropriate health and safety requirements for conducting on-site activities and to make observations to aid in characterizing the site. FIT also determined sampling locations during the reconnaissance inspection. FIT was accompanied by Willis of American Rubber Products Corporation during the reconnaissance inspection.

Reconnaissance Inspection Observations. The Stern site is located approximately 1 mile northwest of the city of Staples, Minnesota, in an industrial park. Farmland surrounds the site; a private residence is located approximately 500 feet northwest of the site and a small industry is located west of the site.

Approximately 4 acres of the site are used for processing operations. The site is occupied by two main facility buildings where most processing operations occur, a raw materials storage garage, a storage shed which houses 55-gallon drums of toluene, and an outfall pond that receives noncontact cooling water. The remainder of the site consists of a gravel parking lot and prairie.

Prairie Avenue borders the site on the north (see Figure 3-1 for locations of site features). A barbed wire fence borders the site on the east and the south. An area densely vegetated by brush and small trees is located at the southwest corner of the site. The north and west boundaries of the site are unfenced.

The two main facility buildings occupy the north-central portion of the site. The buildings are adjacent to one another; the westernmost building is the larger of the two. A paved circular drive serves as the entrance to the site. Gravel parking areas are located north of the main facility buildings. A storage garage that houses raw materials for rubber production is located between the eastern fence and the southeast corner of the main facility buildings. A storage shed that houses 55-gallon drums of unused toluene and waste toluene is located north of the storage garage. The area immediately west of the storage shed is paved in the immediate area of the main facility buildings. Used pallets and waste disposal containers are stored at this paved area.

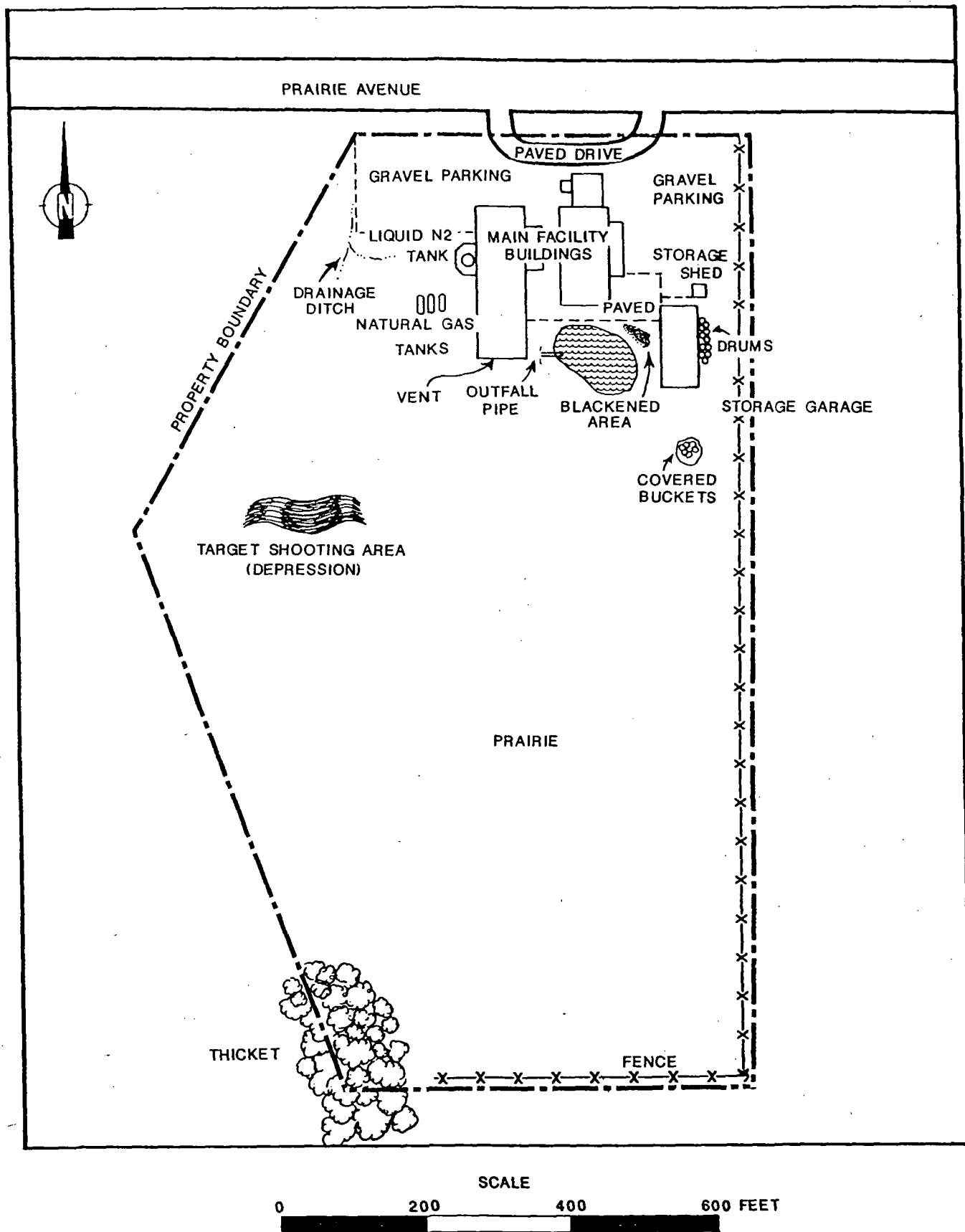


FIGURE 3-1 SITE FEATURES
3-3

A blackened area of soil where waste rubber was previously burned is located west of the storage garage. Located west of the blackened area is an outfall pond that receives noncontact cooling water. The noncontact cooling water is discharged from the westernmost main facility building through an outfall pipe that extends from the southeast corner of the building into the northwest section of the outfall pond.

Drums containing waste oils from the molding process were stored along the east side of the storage garage. Approximately nine drums were observed. Two of the drums were not sealed and the lids were either partially on or missing altogether. The soil beneath the drums was stained black. The unsealed drums contained oily sludge and one sealed drum was labeled "corrosive." An additional drum was observed floating in the southwest end of the outfall pond.

Located approximately 50 yards south of the storage garage was a pile of empty plastic buckets covered by a tarp. The buckets were previously manufactured at the Stern site; the company no longer manufactures buckets (Stern 1990).

A depression was observed in the prairie southwest of the main facility buildings. This area is used to dispose of grass clippings and for firearms target practice. Used shell casings and targets were observed in this depression.

Three natural gas tanks are located west of the main facility buildings. A tank that holds liquid nitrogen used in the freezing process is located west of the main facility buildings. A vent that provides ventilation to the main facility buildings is located on the southwest end of the westernmost building (Stern 1990).

A drainage ditch extended south from the gravel parking lot in the northwest corner of the Stern site. According to the site representatives, the drainage ditch was recently excavated to facilitate drainage of the gravel parking lot (Stern 1990).

The remaining portions of the Stern site consists of prairie. Deer tracks and gopher holes were observed in several areas of the prairie. Photographs of the Stern site are provided in Appendix C.

3.4 SAMPLING PROCEDURES

Samples were collected by FIT at locations selected during the reconnaissance inspection to determine whether U.S. EPA Target Compound List (TCL) compounds or Target Analyte List (TAL) analytes were present at the site. The TCL and TAL are included with corresponding quantitation/detection limits in Appendix D.

On May 9, 1990, FIT collected four on-site soil samples, three on-site sediment samples, and one off-site potential background soil sample. On May 10, 1990, FIT collected three residential well samples. The site representatives accepted offered portions of FIT-collected soil/sediment samples, but did not accept offered portions from the sampling of an on-site well, designated as Residential Well 2. This well is used for on-site manufacturing purposes and does not supply drinking water.

Soil/Sediment Sampling Procedures. Four soil samples (designated as S1, S2, S3, and S7) were collected on-site to determine waste characteristics at the site. Surface soil sample S1 was collected near the drums on the east side of the storage garage, from the area of blackened, stained soil (see Figure 3-2 for on-site soil/sediment sampling locations). A composite surface soil sample, S2, was collected from the area of blackened soil located on the west side of the storage garage where waste rubber previously had been burned. Surface soil sample S3 was collected approximately 15 feet south of the main facility buildings, below the vent. Soil sample S7 was a composite subsurface soil sample collected from three locations in the prairie portion of the site to determine waste characteristics on the remaining portion of the site.

A potential background soil sample (designated as S8) was collected off-site to determine the representative chemical content of the soil in the area surrounding the site. Sample S8 was collected from a wooded area approximately 1/2 mile west of the site near Prairie Avenue, approximately 30 feet south of the road (see Figure 3-3 for off-site soil sampling location). The location was selected because the ground surface appeared to be undisturbed.

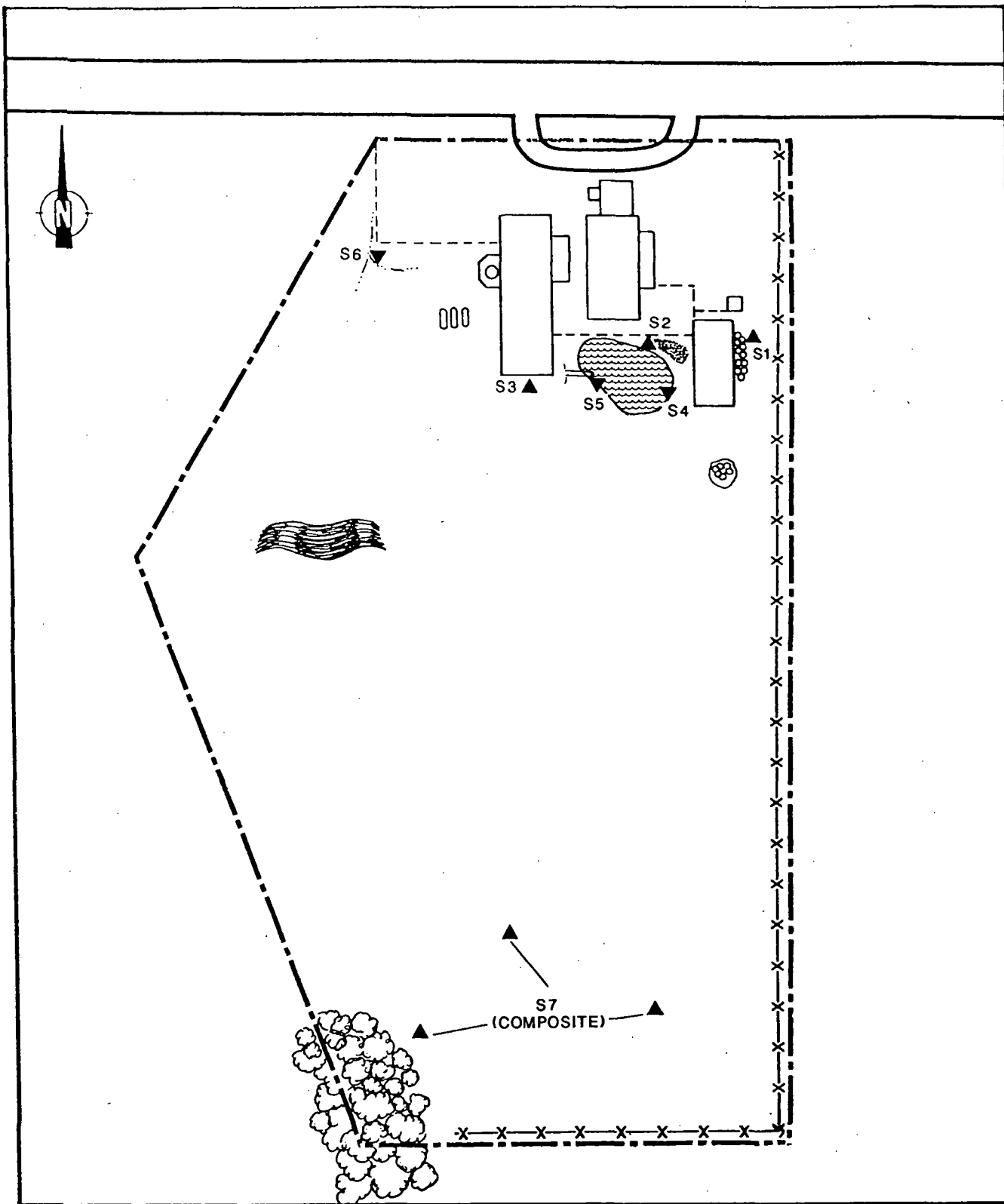
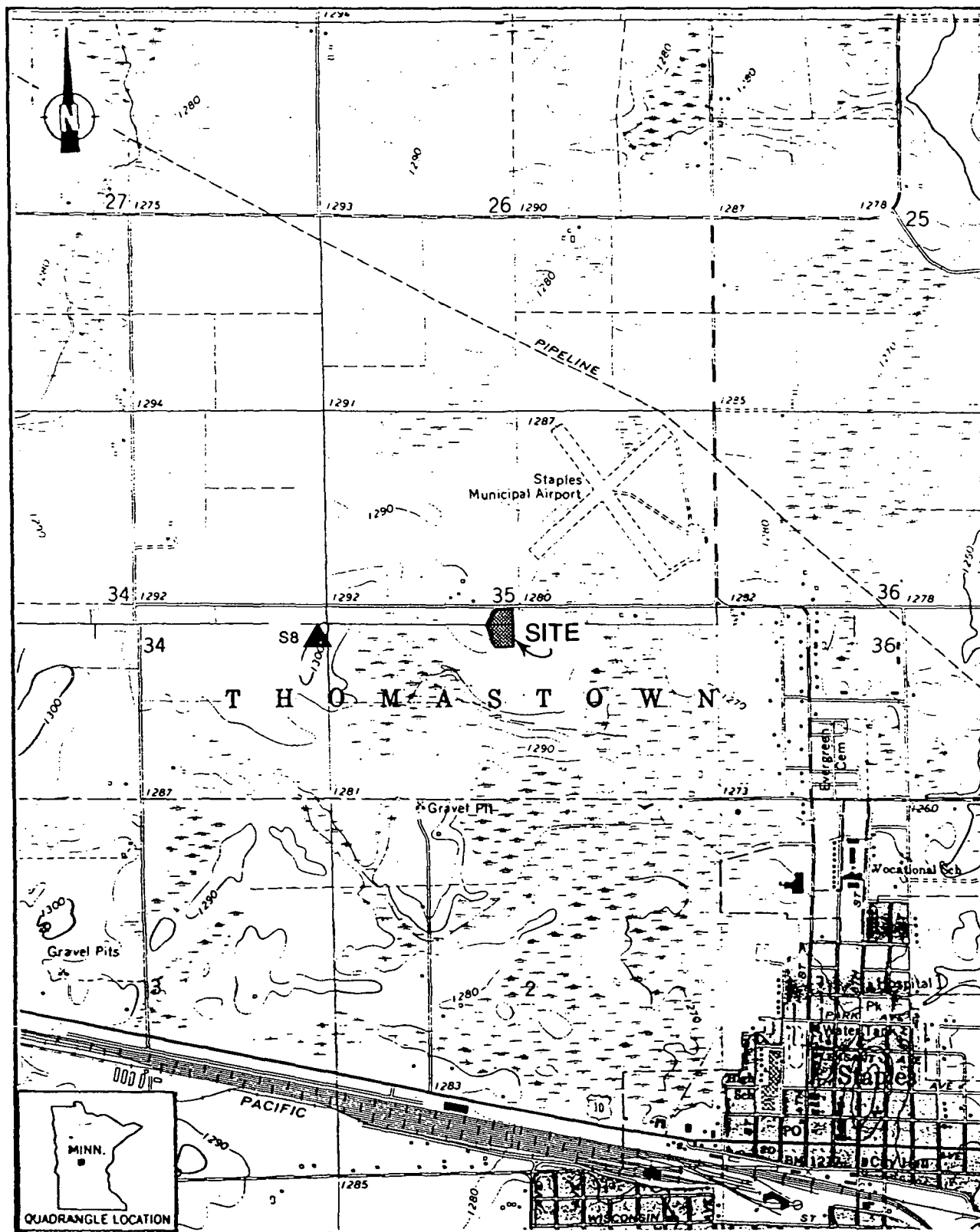


FIGURE 3-2 ON-SITE SOIL/SEDIMENT SAMPLING LOCATIONS



SOURCE: USGS, Staples and Staples NE, MN Quadrangles, 7.5 Minute Series, 1966.

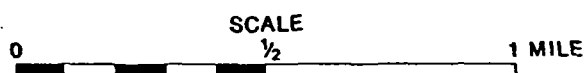


FIGURE 3-3 OFF-SITE SOIL SAMPLING LOCATION

Three on-site sediment samples (designated as S4, S5, and S6) were collected to determine whether TCL compounds and TAL analytes were present in the outfall pond and drainage ditch.

Sediment sample S4 was collected near the drum floating in the southwest end of the outfall pond. Sediment sample S5 was collected below the outfall pipe. Sediment sample S6 was collected from the bottom of the drainage ditch that drains the gravel parking lot on the northwest side of the site.

Surface soil samples S1, S2, S3, and S8 were collected at depths of approximately 1 to 6 inches. Composite soil sample S7 was collected at a depth of approximately 18 inches.

Sediment samples S4 and S5 were collected using a shovel and a garden trowel. Sediment sample S6 and soil samples S1, S2, S3, and S8 were collected using a garden trowel. Composite soil sample S7 was collected using a posthole digger and garden trowel. Soil/sediment samples were transferred to a stainless steel bowl for volatile organic analysis; the remaining portions of the samples were then thoroughly mixed. Sample material from the stainless steel bowl was placed in sample bottles using stainless steel spoons (E & E 1987).

Standard E & E decontamination procedures were adhered to during the collection of all soil/sediment samples. The procedures included the scrubbing of all equipment (e.g., trowels, spoons, shovel, bowls, and posthole digger) with a solution of detergent (Alconox) and distilled water, and triple-rinsing the equipment with distilled water before the collection of each sample (E & E 1987). All soil/sediment samples were packaged and shipped in accordance with U.S. EPA-required procedures.

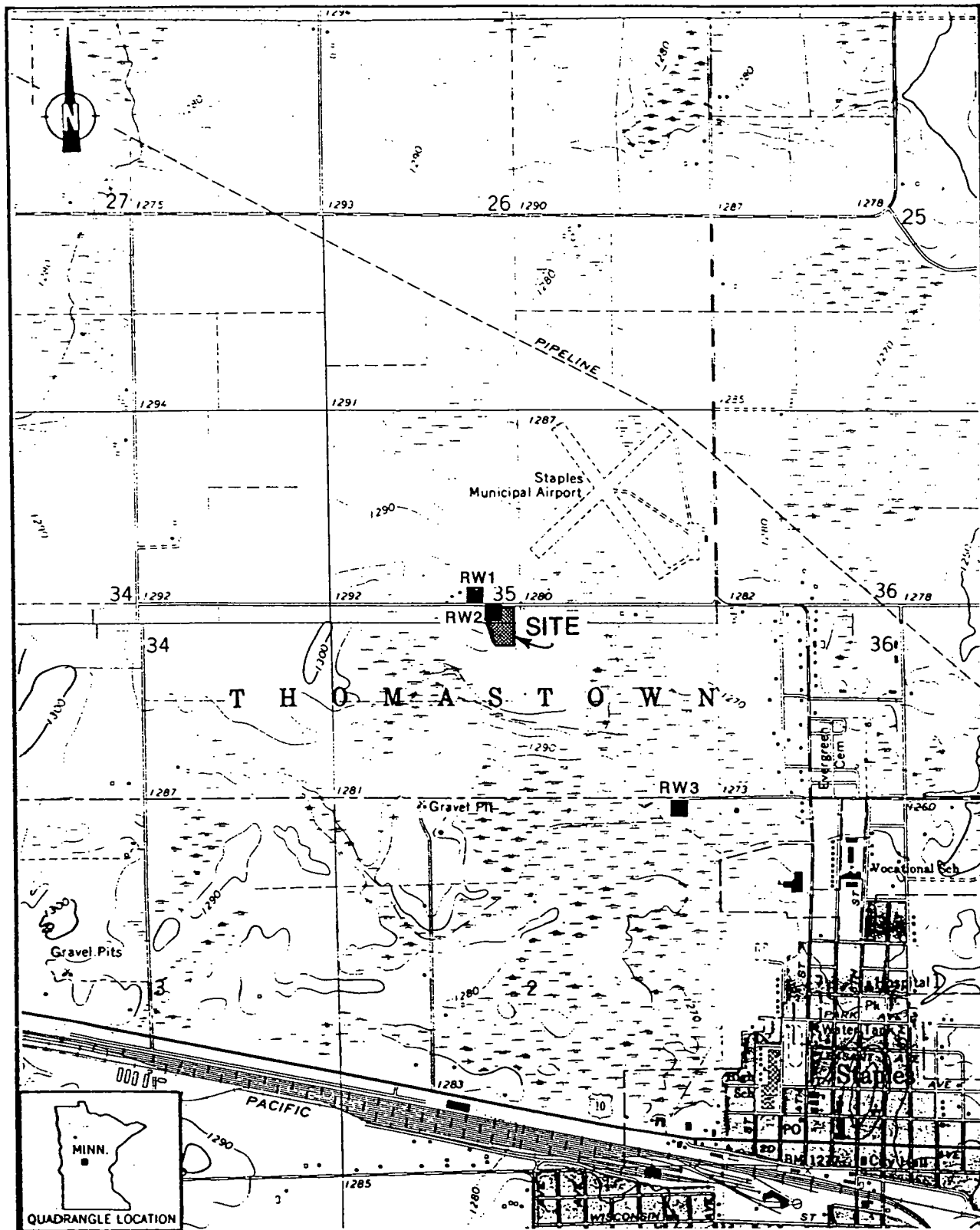
As directed by U.S. EPA, all soil/sediment samples were analyzed using the U.S. EPA Contract Laboratory Program (CLP) for TCL compounds and for TAL analytes by the U.S. EPA Central Regional Laboratory (CRL) of Chicago, Illinois.

Residential Well Sampling Procedures. Residential well samples (designated as RW1 through RW3) were collected to determine whether TCL compounds and/or TAL analytes had migrated from the site into the area groundwater.

The residential well sampling locations were selected because of their proximity to the site, the availability of private wells for sampling, and the east-southeasterly flow of groundwater in the Staples area (MPCA 1989). Sample RW1 was collected from a residence approximately 500 feet northwest of the Stern site as a potential upgradient sample (see Figure 3-4 for residential well sampling locations). Sample RW2 was collected from the on-site well used to provide noncontact cooling water. Sample RW3 was collected from a residence approximately 3/4 miles southeast of the site as a potential downgradient sample (see Table 3-1 for addresses of residential well sampling locations and approximate depths of wells sampled).

All residential well samples were obtained from outlets that bypassed water treatment systems and storage tanks. Water was allowed to discharge from the outlets for 15 minutes before samples were collected to ensure that the sample sources had been purged of standing water (E & E 1987). In accordance with U.S. EPA quality assurance/quality control (QA/QC) requirements, a duplicate residential well sample and a field blank sample were collected. The field blank sample was prepared from distilled water. The duplicate sample was collected at location RW2.

As directed by U.S. EPA, all residential well samples were analyzed for TCL compounds using the U.S. EPA CLP and for TAL analytes using the U.S. EPA CRL of Chicago, Illinois.



SOURCE: USGS, Staples and Staples NE, MN Quadrangles, 7.5 Minute Series, 1966.

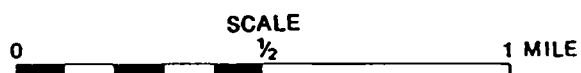


FIGURE 3-4 RESIDENTIAL WELL SAMPLING LOCATIONS
3-10

Table 3-1

ADDRESSES AND DEPTHS OF RESIDENTIAL WELLS

Sample	Well Depth (feet)	Address
RW1	~ 20 feet	Route 2 Box 112 Staples, MN 56479
RW2	~ 130 feet	Prairie Avenue Airport Industrial Park Staples, MN 56479
RW3	~ 120 to 130 feet	Route 2 Box 138 Staples, MN 56479

4. ANALYTICAL RESULTS

This section presents results of the chemical analysis of FIT-collected soil/sediment and residential well samples for TCL compounds and TAL analytes. All samples were analyzed for volatile organics, semivolatile organics, pesticides/polychlorinated biphenyls (PCBs), metals, and cyanides. Complete chemical analysis results of FIT-collected soil/sediment and residential well samples are provided in Tables 4-1 and 4-2, respectively.

Quantitation/detection limits used in the analysis of soil/sediment and residential well samples are provided in Appendix D.

The analytical data for the chemical analysis of soil/sediment and residential well samples collected for this SSI have been reviewed by U.S. EPA for compliance with terms of CLP, and the review has been approved by U.S. EPA. The analytical data have also been reviewed by FIT for validity and usability. Any additions, deletions, or changes to the data have been incorporated in the chemical analysis results tables presented in this section.

Based on analytical results received from CRL, toluene concentration in sample RW2 was found to be greater than 500 µg/L. On May 25, 1990, FIT contacted Debra Peterson of the Minnesota Department of Public Health (MDPH) concerning the high concentrations of toluene in groundwater and the possible health effects that may result from exposure to this chemical. FIT recommended that MDPH contact the owner/operator of the Stern site and advise that water obtained from the on-site well not be used for drinking or food processing.

Table 4-1
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SOIL/SEDIMENT SAMPLES

Sample Collection Information and Parameters	S1	S2	S3	S4	S5	S6	S7	S8
Date	5/9/90	5/9/90	5/9/90	5/9/90	5/9/90	5/9/90	5/9/90	5/9/90
Time	1015	1020	1040	1040	1100	1150	1210	1240
CRL Log Number	90FS15S20	90FS15S21	90FS15S22	90FS15S23	90FS15S24	90FS15S25	90FS15S26	90FS15S27
CLP Organic Traffic Report Number	EKG00	EKG01	EKG02	EKG03A	EKG04A	EKG05A	EKG06	EKG07
<u>Compound Detected</u> (values in ug/kg)								
<u>Volatile Organics</u>								
carbon disulfide	--	4J	20J	--	--	--	--	--
toluene	--	--	--	--	--	--	--	2J
<u>Semivolatile Organics</u>								
bis(2-ethylhexyl)phthalate	410,000	410,000	--	--	--	160J	340J	--
<u>Pesticides/PCBs</u>								
beta BHC	33J	240	--	--	--	--	--	--
gamma BHC (Lindane)	--	110	--	--	--	--	--	--
4,4'-DDE	--	23J	--	--	--	--	--	--
4,4'-DDD	--	16J	--	--	--	--	--	--
4,4'-DDT	--	47J	--	--	--	--	--	--
alpha Chlordane	--	31J	--	--	--	--	--	--
gamma Chlordane	--	50J	--	--	--	--	--	--
<u>Analyte Detected</u> (values in mg/kg)								
aluminum	5,100	3,800	3,400	2,300	3,600	4,800	3,100	7,600
antimony	--	0.6	--	--	--	--	--	--
arsenic	1.4	1.5	1.2	--	0.4	1	0.7	2.3
barium	34	53	37	23	35	35	24	150
beryllium	0.1	0.3	0.2	0.1	0.2	0.3	0.2	0.6
cadmium	0.14	1.4	0.12	0.05	0.06	0.07	0.03	0.43
calcium	3,100	11,000	1,000	1,000	900	1,300	500	3,200
chromium	15	13	4.1	4.3	4.5	7.9	5.1	11
cobalt	3.2	3	2	1.3	1.6	2.6	2	5
copper	29	24	2.7	3	3.9	3.9	1.8	7.4
iron	7,800	9,100	4,200	2,800	3,500	5,400	3,800	9,500
lead	11	51	4.1	7.8	5	3.8	2.3	13
magnesium	2,100	6,600	800	700	700	1,100	700	1,500
manganese	160	180	210	39	77	160	120	820
mercury	0.03	0.06	--	--	--	--	--	0.08
nickel	11	9	4.2	3.5	4.1	5.5	5.2	9.2
potassium	700	--	--	--	--	--	--	1,000

Table 4-1 (Cont.)

Sample Collection Information and Parameters	Sample Number							
	S1	S2	S3	S4	S5	S6	S7	S8
selenium	--	--	--	--	--	--	--	0.3
sodium	200	100	--	--	--	--	--	--
vanadium	15	8.1	7.1	5.7	6.3	9.9	8.2	16
zinc	300	2,500	18	19	29	13	7.5	43

* EKG 03, 04, and 05 VOA results have been rejected because of zero recovery of surrogate compounds.

-- Not detected.

COMPOUND QUALIFIER

DEFINITION

INTERPRETATION

J

Indicates an estimated value.

Compound value may be semiquantitative.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED RESIDENTIAL WELL SAMPLES

Sample Collection Information and Parameters	Sample Number				
	RW1	RW2	Duplicate	RW3	Blank
Date	5/10/90	5/10/90	5/10/90	5/10/90	5/10/90
Time	1020	945	945	950	1050
CRL Log Number	90FS15S16	90FS15S17	90FS15D17	90FS15S18	90FS02R55
CLP Organic Traffic Report Number	EKG08	EKG09	EKG10	EKG11	EKG12
Temperature (°C)	3	7	7	3	2
Specific Conductivity (µmhos/cm)	310	250	250	320	0
pH	6.80	6.81	6.81	7.44	7.14
<u>Compound Detected</u>					
(values in µg/L)					
<u>Volatile Organics</u>					
1,1,1-trichloroethane	--	--	--	--	0.8J
toluene	--	17,000	17,000	--	--
<u>Semivolatile Organics</u>					
benzyl alcohol	--	5	8	--	--
2-methylphenol	--	770D	870D	--	--
4-methylphenol	--	67	80	--	--
bis(2-ethylhexyl)phthalate	1	2	1	2	--
<u>Analyte Detected</u>					
(values in µg/L)					
barium	83.6	91.3	90.9	194	--
calcium	77,500	44,300	44,300	42,300	--
chromium	--	--	8.1	--	--
cobalt	--	--	7.4	--	--
copper	--	8.1	6.8	--	--
iron	14,200	694	664	681	--
lead	--	4	4	--	--

Table 4-2 (Cont.)

Sample Collection Information and Parameters	RW1	RW2	<u>Sample Number</u>	RW3	Blank
			Duplicate		
magnesium	10,300	11,300	11,300	20,300	--
manganese	931	2,530	2,550	8.0	--
sodium	3,590	24,500	24,300	42,600	--
thallium	--	--	--	6	--
vanadium	6.7	--	--	--	--

-- Not detected.

COMPOUND QUALIFIERS

DEFINITION

INTERPRETATION

J

Indicates an estimated value.

Compound value may be semiquantitative.

D

This flag identifies all compounds identified
in an analysis at a secondary dilution factor.Alerts data user to a possible change in
the CRQL. Data is quantitative.

5. DISCUSSION OF MIGRATION PATHWAYS

5.1 INTRODUCTION

This section presents discussions of data and information pertaining to potential migration pathways and targets of TCL compounds and TAL analytes that are possibly attributable to the Stern site.

The five migration pathways of concern discussed are groundwater, surface water, air, fire and explosion, and direct contact.

5.2 GROUNDWATER

TCL compounds and TAL analytes were detected in residential well samples, as well as in on-site soil/sediment samples collected by FIT. Specific compounds detected in the groundwater include toluene at 17,000 µg/L, 2-methylphenol at 770D µg/L, and 4-methylphenol at 80 µg/L in residential well sample RW2, collected from the on-site well (see Table 4-2 for definition of the D qualifier). Concentrations of toluene were not detected in sample RW1, collected from an upgradient residential well, nor in sample RW3, collected from a downgradient residential well. The presence of toluene can be attributed to the site based on the following information.

- Toluene is stored and used on-site (Stern 1990).
- Concentrations of toluene were not detected in upgradient well sample RW1.

5. DISCUSSION OF MIGRATION PATHWAYS

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- o Toluene is stored and used on-site (Stern 1990).
- o Concentrations of toluene were not detected in upgradient well sample RW1.

- o MPCA received a complaint that toluene was allegedly dumped into the on-site outfall pond (Gries 1985).

Phthalates, pesticides, and metals were detected in on-site soil samples collected by FIT. Specific compounds detected include bis-(2-ethylhexyl) phthalate at 410,000 µg/kg in soil samples S1 and S2; beta BHC at 240 µg/kg in soil sample S2; gamma BHC (Lindane) at 110 µg/kg in soil sample S2; and zinc at 2,500 mg/kg in soil sample S2.

Migration of TCL compounds and TAL analytes to groundwater is directly influenced by the geology of the area surrounding the site. The general geology of the area surrounding the Stern site consists of unconsolidated glacial till as deep as 200 feet. The unconsolidated glacial till consists of a buried drumlin field overlain by outwash sands, clays, and gravels (Morey 1982). The unconsolidated glacial till overlies Precambrian igneous and metamorphic bedrock, comprising an area of impermeable bedrock.

Area well logs indicate that the sand and gravel units within the glacial till comprise the aquifer of concern (AOC) used for drinking water in the vicinity of the site. The impermeable bedrock is not used as an aquifer within a 3-mile radius of the site (Kanivetsky 1978). Residents served by private wells appear to draw from shallow, water-bearing sand units in the unconsolidated glacial till at depths ranging from 60 to 170 feet. Staples Airport, Staples Airport Industrial Park, and residents of Staples are served by three Staples municipal wells that also draw from shallow, water-bearing sand units in the unconsolidated glacial till. However, these consumers obtain water at depths ranging from 69 to 79 feet. There appears to be no continuous clay layer between the surface and the shallow sand and gravel aquifer. Groundwater flow in the area is believed to be east-southeast (MPCA 1989).

The target population within a 3-mile radius of the site includes both private well and municipal well users who rely on groundwater as their source of drinking water (Selvey 1989). Using United States Geological Survey (USGS) topographic maps of the area (USGS 1963, 1966), 232 homes were counted within a 3-mile radius of the site outside the corporate boundaries of Staples. Using Todd, Wadena, and Cass County

1980 Census information (U.S. Bureau of the Census 1982), average figures of 2.91, 2.86, and 2.73 persons per household, respectively, were used to calculate the target population for a total of approximately 474 persons served by private wells. Additionally, approximately 2,753 persons are served by the Staples municipal wells located within a 3-mile radius of the site (Selvey 1989). The total number of persons using wells as a drinking water source within a 3-mile radius of the site is approximately 3,505.

5.3 SURFACE WATER

In accordance with the U.S. EPA-approved work plan, no surface water samples were collected as part of the SSI of the Stern site. The nearest surface water body is the Crow Wing River, located approximately 1 1/2 miles east of the Stern site. A 100-acre area of wetland is located approximately 1/8 mile south of the site.

TCL compounds and TAL analytes were detected in soil/sediment samples collected by FIT at the Stern site; however, the topography of the area surrounding the site prevents surface runoff to surface water via a direct route.

Surface water within a 4-mile radius of the site is used solely for recreational purposes (Selvey 1990).

5.4 AIR

A release of TCL compounds or TAL analytes to the air was not documented during the SSI of the Stern site. During the reconnaissance inspection, FIT site-entry instruments (colorimetric monitoring tubes for hydrogen cyanide, radiation monitor, oxygen meter, explosimeter, and HNu 101) detected levels above background concentrations at the site. In accordance with the U.S. EPA-approved work plan, further air monitoring was not conducted by FIT.

Because of the presence of TCL compounds and TAL analytes in on-site soils, a potential exists for windblown particles to carry TCL compounds and TAL analytes from the site. Elevated concentrations of organic vapors were detected by the HNu 101 during site reconnaissance. The elevated concentrations were detected at an open, southern entrance to one of the main facility buildings.

The population within a 4-mile radius of the site potentially affected by a release of TCL compounds and TAL analytes to the air is approximately 3,650 persons. This population was calculated by counting houses within a 4-mile radius of the site on USGS topographic maps (USGS 1963, 1966) and multiplying this number by persons-per-household values of 2.91 for Todd County, 2.86 for Wadena County, and 2.73 for Cass County (U.S. Bureau of the Census 1982). This approximate population includes the total population of Staples, Minnesota (Selvey 1989).

5.5 FIRE AND EXPLOSION

According to federal, state, and local file information reviewed by FIT and a telephone conversation with Staples Fire Chief Douglas Case, no documentation exists of an incident of fire or explosion at the site. According to FIT observations and site-entry equipment readings, no potential for fire or explosion existed at the site at the time of the SSI. However, Case stated that the Staples fire department considers the Stern site a fire hazard because of the chemicals stored and the rubber molding processes conducted there (Case 1990).

The population within a 2-mile radius of the site potentially affected by a fire or explosion is 3,303 persons. This population was calculated by counting houses within a 2-mile radius of the site on USGS topographic maps (USGS 1963, 1966) and multiplying this number by persons-per-household values of 2.91 for Todd County and 2.86 for Wadena County (U.S. Bureau of the Census 1982).

5.6 DIRECT CONTACT

According to federal, state, and local file information reviewed by FIT, observations made during the SSI, and the interview with the site representatives, no incidents of direct contact with TCL compounds or TAL analytes at the Stern site have been documented.

A potential for the public to come into direct contact with TCL compounds and TAL analytes does exist because TCL compounds and TAL analytes were detected in two on-site soil samples collected from an openly accessible portion of the site.

American Rubber Products Corporation currently employs 79 persons (Stern 1990); a potential exists for these workers to come into direct

contact with TCL compounds and TCL analytes because these substances were detected in on-site soil/sediment samples, as well as in the on-site production well.

The population within a 1-mile radius of the site potentially affected through direct contact with TCL compounds and TAL analytes at the site is 126 persons. This figure does not include on-site employees. This population was calculated by counting houses within a 1-mile radius of the site on USGS topographic maps (USGS 1963, 1966) and multiplying this number by persons-per-household values of 2.91 for Todd County and 2.86 for Wadena County (U.S. Bureau of the Census 1982).

6. REFERENCES

- Case, Douglas, September 4, 1990, Fire Chief, city of Staples, Minnesota, telephone conversation, contacted by Lawrence Nelson of E & E.
- E & E, 1987, Quality Assurance Project Plan Region V FIT Conducted Site Inspections, Chicago, Illinois.
- Gries, Tom, June 21, 1985, MPCA, RCRA, File Memorandum No. 3012, Stern Rubber and Tool Company, concerning June 3, 1984, Stern site inspection.
- Johnson, LeAnn K., October 2, 1985, MPCA, Hazardous Waste Enforcement Unit, letter, to Terrel Stern of Stern Rubber and Tool Company.
- Kanivetsky, Roman, 1978, Hydrogeological Map of Minnesota, USGS.
- Morey, G. B., and P. K. Sims, Geologic Map of Lake Superior Region, Minnesota Geological Survey, 1982.
- MPCA, December 8, 1989, comments, on SSI work plan prepared by E & E, for Stern Rubber and Tool Company, U.S. EPA ID: MNDO45973419, written by Michael Connolly.
- Selvey, Ron, September 1, 1989, Supervisor, city of Staples, Minnesota, telephone conversation, contacted by Karen M. Spangler of E & E.

Stern, Terrel, and Nick Willis, May 9, 1990, General Manager and Production Manager, respectively, American Rubber Products Corporation, Staples, Minnesota, site representative interview, conducted by Karen M. Spangler of E & E.

U.S. Bureau of the Census, 1982, 1980 Census of Population, Characteristics of the Population, General Population Characteristics, Minnesota, Washington, D.C.

U.S. EPA, February 12, 1988, Office of Solid Waste and Emergency Response, Pre-Remedial Strategy for Implementing SARA, Directive number 9345.2-01, Washington, D.C.

USGS, 1963, Motley, Minnesota Quadrangle, 7.5 Minute Series:
1:24,000.

USGS, 1966, Staples, Minnesota Quadrangle, 7.5 Minute Series:
1:24,000.

USGS 1966a, Staples, Minnesota Northeast Quadrangle, 7.5 Minute Series:
1:24,000.

USGS, 1966b, Aldrich, Minnesota North Quadrangle, 7.5 Minute Series:
1:24,000.

USGS, 1966c, Aldrich, Minnesota South Quadrangle, 7.5 Minute Series:
1:24,000.

USGS, 1966d, Motley, Minnesota Northwest Quadrangle, 7.5 Minute Series:
1:24,000.

5738:3

APPENDIX A

SITE 4-MILE RADIUS MAP

APPENDIX B

U.S. EPA FORM 2070-13



Site Inspection Report



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE MN 02 SITE NUMBER D045973419

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)

STERN RUBBER AND TOOL COMPANY

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER

PRARIE AVENUE, AIRPORT INDUSTRIAL PARK

03 CITY

STAPLES

04 STATE

05 ZIP CODE

06 COUNTY

07 COUNTY CODE

08 CONG DIST

MN

56479

WADENA

659

07

09 COORDINATES

LATITUDE

LONGITUDE

46° 22' 06.0"

094° 48' 03.0"

10 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE ☐ B. FEDERAL

☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER

☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION

05/09/90
MONTH DAY YEAR

02 SITE STATUS

☒ ACTIVE
☐ INACTIVE

03 YEARS OF OPERATION

1973 | PRESENT
BEGINNING YEAR ENDING YEAR

UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA

☒ B. EPA CONTRACTOR

ECOLOGY AND ENVIRONMENT, INC.

☐ C. MUNICIPAL

☐ D. MUNICIPAL CONTRACTOR

☐ E. STATE ☐ F. STATE CONTRACTOR

☐ G. OTHER

(Name of firm)

(Name of firm)

05 CHIEF INSPECTOR

KAREN M. SPANGLER

06 TITLE

ENVIRONMENTAL ENGINEER

07 ORGANIZATION

E&E/FIT

08 TELEPHONE NO.

(312) 663-9415

09 OTHER INSPECTORS

SAM BORRIES

10 TITLE

GEOLOGIST

11 ORGANIZATION

E&E/FIT

12 TELEPHONE NO.

(312) 663-9415

MARK SATTELBERG

BIOLOGIST

E&E/FIT

(312) 663-9415

LAWRENCE NELSON

BIOLOGIST

E&E/FIT

(312) 663-9415

CHARLES HALL

ENVIRONMENTAL ENGINEER

E&E/FIT

(312) 663-9415

13 SITE REPRESENTATIVES INTERVIEWED

TERRY STERN

14 TITLE

PLANT MANAGER

15 ADDRESS

P.O. Box 69 STAPLES, MN 56479

16 TELEPHONE NO.

(218) 894-3898

NICK WILLIS

PRODUCTION MANAGER

P.O. Box 69 STAPLES, MN 56479

(218) 894-3898

DIANE DANCULOVICH

PURCHASING

P.O. Box 69 STAPLES, MN 56479

(218) 894-3898

DAVID BRABEC

CONTROLLER

P.O. Box 69 STAPLES, MN 56479

(218) 894-3898

17 ACCESS GAINED BY (Check one)

☒ PERMISSION
☐ WARRANT

18 TIME OF INSPECTION

5/9/90 - 8:05AM - 1330
5/16/90 - 0900 - 1130

19 WEATHER CONDITIONS

5/9/90 - ~50°F, OVERCAST, WIND ~10 MPH
5/16/90 - ~45°F, SUNNY, WIND ~15 MPH FROM NW

IV. INFORMATION AVAILABLE FROM

01 CONTACT

RON SWENSON

02 OF (Agency/Organization)

MINNESOTA POLLUTION CONTROL AGENCY

03 TELEPHONE NO.

(612) 297-1793

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM

LAWRENCE NELSON

05 AGENCY

U.S. EPA

06 ORGANIZATION

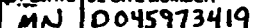
E&E/FIT

07 TELEPHONE NO.

312-663-9415

08 DATE

6/20/90
MONTH DAY YEAR



☐ J. HIGHLY VOLATILE
☐ K. EXPLOSIVE
☐ L. REACTIVE
☐ M. INCOMPATIBLE
☐ N. NOT APPLICABLE

EPA FORM 2C70-13(7-81)



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE: MN 02 SITE NUMBER: 004513419

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: ~3505

02 ☒ OBSERVED (DATE: 5/10/90)

04 NARRATIVE DESCRIPTION

☒ POTENTIAL

☐ ALLEGED

SEE SECTION 5-2 IN NARRATIVE

01 ☒ B. SURFACE WATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: 0

02 ☐ OBSERVED (DATE:)

04 NARRATIVE DESCRIPTION

☒ POTENTIAL

☐ ALLEGED

SEE SECTION 5-3 OF NARRATIVE

01 ☒ C. CONTAMINATION OF AIR

03 POPULATION POTENTIALLY AFFECTED: ~3650

02 ☒ OBSERVED (DATE: 5/9/90)

04 NARRATIVE DESCRIPTION

☒ POTENTIAL

☐ ALLEGED

SEE SECTION 5-4 OF NARRATIVE

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS

03 POPULATION POTENTIALLY AFFECTED: ~3303

02 ☐ OBSERVED (DATE:)

04 NARRATIVE DESCRIPTION

☒ POTENTIAL

☐ ALLEGED

SEE SECTION 5-5 OF NARRATIVE

01 ☒ E. DIRECT CONTACT

03 POPULATION POTENTIALLY AFFECTED: ~126

02 ☐ OBSERVED (DATE:)

04 NARRATIVE DESCRIPTION

☒ POTENTIAL

☐ ALLEGED

SEE SECTION 5-6 OF NARRATIVE

01 ☒ F. CONTAMINATION OF SOIL

03 AREA POTENTIALLY AFFECTED: ~26
(Acres)

02 ☒ OBSERVED (DATE: 5/10/90)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

SEE SECTION 4 AND 5 OF NARRATIVE

01 ☒ G. DRINKING WATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: ~3505

02 ☐ OBSERVED (DATE:)

04 NARRATIVE DESCRIPTION

☒ POTENTIAL

☐ ALLEGED

SEE SECTION 5-2 OF NARRATIVE

01 ☒ H. WORKER EXPOSURE/INJURY

03 WORKERS POTENTIALLY AFFECTED: 79

02 ☐ OBSERVED (DATE:)

04 NARRATIVE DESCRIPTION

☒ POTENTIAL

☐ ALLEGED

SEE SECTION 5-6 OF NARRATIVE

01 ☒ I. POPULATION EXPOSURE/INJURY

03 POPULATION POTENTIALLY AFFECTED: ~3650

02 ☐ OBSERVED (DATE:)

04 NARRATIVE DESCRIPTION

☒ POTENTIAL

☐ ALLEGED

SEE SECTION 5-6 OF NARRATIVE



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
MN 004597349

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL

☐ ALLEGED

THE MAJORITY OF THE SITE PROPERTY IS PRARIE, SINCE TCL COMPOUNDS
AND TAL ANALYTES WERE DETECTED IN ON-SITE SOILS, A POTENTIAL EXISTS
FOR DAMAGE TO DEARIE GRASSES.

01 ☒ K. DAMAGE TO FAUNA

04 NARRATIVE DESCRIPTION (include name(s) of species)

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL

☐ ALLEGED

FIT OBSERVED DEER TRACKS AND GOPHER HOLES ON-SITE.

01 ☒ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL

☐ ALLEGED

SEE J. AND K. ABOVE

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES

(Leaking drums, Spilling liquids, Leaking drums)

03 POPULATION POTENTIALLY AFFECTED: ~3650

02 ☒ OBSERVED (DATE: MAY 1990)

☐ POTENTIAL

☐ ALLEGED

04 NARRATIVE DESCRIPTION

SEE SECTION 3.3 OF NARRATIVE FOR DETAILS

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

NONE KNOWN OR REPORTED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

NONE NEARBY

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☒ ALLEGED

ALLEGATIONS OF UNAUTHORIZED DUMPING INTO ON-SITE OUTFALL POND

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

NONE KNOWN OR REPORTED

III. TOTAL POPULATION POTENTIALLY AFFECTED: 3,650

IV. COMMENTS

NONE

V. SOURCES OF INFORMATION (Cite specific references e.g., State files, sample analysis reports)

E+E/FIT SITE INSPECTION, 1990.
E+E/FIT FILES, REGION II, CHICAGO.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NJ D045973419

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
<input type="checkbox"/> A. NPDES				
<input type="checkbox"/> B. UIC				
<input type="checkbox"/> C. AIR				
<input type="checkbox"/> D. RCRA				
<input type="checkbox"/> E. RCRA INTERIM STATUS				
<input type="checkbox"/> F. SPCC PLAN				
<input type="checkbox"/> G. STATE (Specify)				
<input type="checkbox"/> H. LOCAL (Specify)				
<input type="checkbox"/> I. OTHER (Specify)				
<input checked="" type="checkbox"/> J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 OTHER
<input checked="" type="checkbox"/> A. SURFACE IMPOUNDMENT	UNKNOWN	UNKNOWN	<input type="checkbox"/> A. INCINERATION	<input checked="" type="checkbox"/> A. BUILDINGS ON SITE
<input type="checkbox"/> B. PILES			<input type="checkbox"/> B. UNDERGROUND INJECTION	3
<input checked="" type="checkbox"/> C. DRUMS, ABOVE GROUND	~ 40 DRUMS	GALLONS	<input type="checkbox"/> C. CHEMICAL/PHYSICAL	
<input checked="" type="checkbox"/> D. TANK, ABOVE GROUND	UNKNOWN	UNKNOWN	<input type="checkbox"/> D. BIOLOGICAL	
<input type="checkbox"/> E. TANK, BELOW GROUND			<input type="checkbox"/> E. WASTE OIL PROCESSING	
<input type="checkbox"/> F. LANDFILL			<input type="checkbox"/> F. SOLVENT RECOVERY	
<input type="checkbox"/> G. LANDFARM			<input type="checkbox"/> G. OTHER RECYCLING/RECOVERY	
<input type="checkbox"/> H. OPEN DUMP			<input checked="" type="checkbox"/> H. OTHER BURNING (Specify)	
<input type="checkbox"/> I. OTHER (Specify)				06 AREA OF SITE ~ 2.6 Acres

07 COMMENTS

THE SITE IS AN ACTIVE PRODUCER OF MOLDED RUBBER PRODUCTS.
DRUMS ON SITE USED TO STORE RAW AND WASTE TOLUENE,
NATURAL GAS TANKS AND LIQUID N₂ TANK ON-SITE.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

TWO DRUMS ARE NOT SEALED, NO CONTAINMENT EXISTS IN CASE OF SPILL

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

SITE IS UNFENCED ON NORTH AND WEST PROPERTY BOUNDARIES

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

E+E/FIT SITE INSPECTION, 1990.
E+E/FIT FILES, REGION II, CHICAGO.



POTENTIAL HAZARDOUS WASTE-SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

L IDENTIFICATION

01 STATE MN 02 SITE NUMBER 00459973419

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY
(Check as applicable)

SURFACE WELL
COMMUNITY A. ☐ B. ☒
NON-COMMUNITY C. ☐ D. ☒

02 STATUS NA

ENDANGERED AFFECTED MONITORED
A. ☐ B. ☐ C. ☒
D. ☒ E. ☐ F. ☐

03 DISTANCE TO SITE

A. ~1.5 (mi)
B. ~500 FT. (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A. ONLY SOURCE FOR DRINKING
☐ B. DRINKING (Other sources available)
COMMERCIAL, INDUSTRIAL IRRIGATION (No other water sources available)
☐ C. COMMERCIAL, INDUSTRIAL IRRIGATION (Limited other sources available)
☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER ~3,505

03 DISTANCE TO NEAREST DRINKING WATER WELL ~500 FT. (mi)

04 DEPTH TO GROUNDWATER

~60-80 (ft)

05 DIRECTION OF GROUNDWATER FLOW

EAST-SOUTHWEST

06 DEPTH TO AQUIFER OF CONCERN

~60 (ft)

07 POTENTIAL YIELD OF AQUIFER

UNKNOWN (gpd)

08 SOLE SOURCE AQUIFER

☐ YES ☒ NO

09 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)

SEE SECTION 5.2 AND APPENDIX E FOR DETAILS

10 RECHARGE AREA

☒ YES

COMMENTS

RECHARGE THROUGH INFILTRATION AND PRECIPITATION

☐ NO

11 DISCHARGE AREA

☒ YES

COMMENTS

WETLANDS SOUTH OF SITE

☐ NO

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR RECREATION
DRINKING WATER SOURCE
☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
☐ C. COMMERCIAL, INDUSTRIAL
☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:

AFFECTED

DISTANCE TO SITE

WETLANDS SOUTH OF SITE
CROW WING RIVER

☐

~1/4

(mi)

☐

~2

(mi)

☐

(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE

A. ~126
NO. OF PERSONS

TWO (2) MILES OF SITE

B. ~3302
NO. OF PERSONS

THREE (3) MILES OF SITE

C. ~3505
NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

~500 FT. (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

~1168

04 DISTANCE TO NEAREST OFF-SITE BUILDING

~500 FT. (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of occupation within vicinity of site e.g., rural, fringe, densely populated urban area)

SEE SECTION 2.2 OF NARRATIVE AND APPENDIX A FOR DETAILS



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

IN 0045973419

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☒ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK

~200 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE

UNKNOWN (ft)

05 SOIL pH

UNKNOWN

06 NET PRECIPITATION

3 (in)

07 ONE YEAR 24 HOUR RAINFALL

2.2 (in)

08 SLOPE

SITE SLOPE

≤ 3 %

DIRECTION OF SITE SLOPE

SOUTH - SOUTHWEST

TERRAIN AVERAGE SLOPE

≤ 3 %

09 FLOOD POTENTIAL

SITE IS IN N/A YEAR FLOODPLAIN

10

☒ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE

OTHER

A. N/A (mi)

B. 1/4 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

N/A (mi)

ENDANGERED SPECIES: N/A

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL

RESIDENTIAL AREAS; NATIONAL/STATE PARKS,
FORESTS, OR WILDLIFE RESERVES

AGRICULTURAL LANDS
PRIME AG LAND AG LAND

A. 1/4 (mi)

B. 1 (mi)

C. N/A (mi)

D. 1/2 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

SEE APPENDIX A FOR DETAILS

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, source analysis, reports)

E+E/FIT FILES, REGION II, CHICAGO.
E+E/FIT SITE INSPECTION, 1990.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I IDENTIFICATION

01 STATE 02 SITE NUMBER
MA 15045973419

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	8	TEL: S-CUBED, SAN DIEGO, CALIF. TEL: CENTRAL REGIONAL LABS, CHICAGO, IL	ON-FILE
VEGETATION			
OTHER RES. WELLS	3	TEL: COMPU-CHEM LABS, CHAPEL HILL, NC TEL: CENTRAL REGIONAL LAB, CHICAGO, IL	ON FILE

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNU-101	HAD READINGS 1 TO 2 TIMES ABOVE BACKGROUND
RADIATION MINI-ALERT	NONE ABOVE BACKGROUND
EXPLOSI-METER	NO MEASUREMENTS ABOVE BACKGROUND
COLORIMETRIC MONITOR TUBES FOR CYANIDE	NO COLOR CHANGE
OXYGEN METER	21% OXYGEN

IV. PHOTOGRAPHS AND MAPS

01 TYPE <input checked="" type="checkbox"/> GROUND <input type="checkbox"/> AERIAL	02 IN CUSTODY OF <u>ECOLOGY AND ENVIRONMENT, INC.</u> <small>(Name of organization or individual)</small>
03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS <u>ECOLOGY AND ENVIRONMENT, INC., CHICAGO</u>

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

SEE SECTION 4 OF NARRATIVE.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E+E/FITFILES, REGION II, CHICAGO
E+E/FIT SITE INSPECTION, 1990,



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

IDENTIFICATION

01 STATE 02 SITE NUMBER
MN 0045973419

II. CURRENT OWNER(S)				PARENT COMPANY (If applicable)			
01 NAME AMERICAN RUBBER PRODUCTS COMPANY		02 D+B NUMBER		08 NAME SAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) AIRPORT INDUSTRIAL PARK		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY STAPLES		06 STATE IL	07 ZIP CODE 56479	12 CITY		13 STATE	14 ZIP CODE
01 NAME N/A		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME N/A		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME N/A		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
III. PREVIOUS OWNER(S) (List most recent first)				IV. REALTY OWNERS(S) (If applicable; list most recent first)			
01 NAME STERN RUBBER AND TOOL CO.		02 D+B NUMBER		01 NAME N/A		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) AIRPORT INDUSTRIAL PARK		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY STAPLES		06 STATE MN	07 ZIP CODE 56479	05 CITY		06 STATE	07 ZIP CODE
01 NAME N/A		02 D+B NUMBER		01 NAME N/A		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
01 NAME N/A		02 D+B NUMBER		01 NAME N/A		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)							
E+E/FIT SITE INSPECTION, 1990. E+E/FIT FILES, REGION IV, CHICAGO							



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

IDENTIFICATION

01 STATE 02 SITE NUMBER

MN D 045973419

II. CURRENT OPERATOR (Provide if different from owner)

OPERATOR'S PARENT COMPANY (if applicable)

01 NAME AMERICAN RUBBER PRODUCTS COMPANY	02 D+B NUMBER	10 NAME SAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) AIRPORT INDUSTRIAL PARK	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY STAPLES	06 STATE MN	07 ZIP CODE 56479	14 CITY
08 YEARS OF OPERATION 1986-PRESENT	09 NAME OF OWNER SAME	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (if applicable)

01 NAME STERN RUBBER AND TOOL CORP.	02 D+B NUMBER	10 NAME N/A	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) AIRPORT INDUSTRIAL PARK	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY STAPLES	06 STATE MN	07 ZIP CODE 56479	14 CITY
08 YEARS OF OPERATION 1973-1986	09 NAME OF OWNER DURING THIS PERIOD TERRY STERN	15 STATE	16 ZIP CODE

01 NAME N/A	02 D+B NUMBER	10 NAME N/A	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD	15 STATE	16 ZIP CODE

01 NAME N/A	02 D+B NUMBER	10 NAME N/A	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

E+E/FIT FILES, REGION IV, CHICAGO
E+E/FIT SITE INSPECTION, 1990.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

IDENTIFICATION

01 STATE 02 SITE NUMBER

MN 0045973419

II. ON-SITE GENERATOR

01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME NORUM CHEMICAL	02 D+B NUMBER	01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE WI	05 CITY	06 STATE 07 ZIP CODE
01 NAME N/A	02 D+B NUMBER	01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME Worum Chemical	02 D+B NUMBER	01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE WI	05 CITY	06 STATE 07 ZIP CODE
01 NAME N/A	02 D+B NUMBER	01 NAME N/A	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E+E/FIT FILES, REGION II, CHICAGO,
E+E/FIT SITE INSPECTION, 1990,



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

IDENTIFICATION

01 STATE 02 SITE NUMBER

AM D045973419

II. PAST RESPONSE ACTIVITIES

01 <input type="checkbox"/> A. WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input checked="" type="checkbox"/> G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION DRUMS ARE REMOVED FROM SITE.	02 DATE	03 AGENCY
01 <input type="checkbox"/> H. ON SITE BURIAL 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> L. ENCAPSULATION 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> N. CUTOFF WALLS 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> O. EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE N/A	03 AGENCY
01 <input type="checkbox"/> Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE N/A	03 AGENCY



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
MN D045973419

II. PAST RESPONSE ACTIVITIES (Continued)

01 <input type="checkbox"/> R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> S. CAPPING/COVERING 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> T. BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> U. GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> V. BOTTOM SEALED 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> W. GAS CONTROL 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> X. FIRE CONTROL 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> Y. LEACHATE TREATMENT 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> Z. AREA EVACUATED 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> 1. ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> 2. POPULATION RELOCATED 04 DESCRIPTION	02 DATE _____ N/A	03 AGENCY _____
01 <input type="checkbox"/> 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
NONE KNOWN		

III. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis reports)

E+E/FIT FILES, REGION V, CHICAGO.
E+E/FIT, SITE INSPECTION, 1990.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

4. IDENTIFICATION

01 STATE 02 SITE NUMBER
MA 0045973419

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

NONE KNOWN

III. SOURCES OF INFORMATION (See specific references, e.g., state files, sample analysis, reports)

E+E/FIT SITE INSPECTION, 1990.
E+E/FIT FILES, REGION IV, CHICAGO.

APPENDIX C

FIT SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER & TOOL COMPANY

PAGE 1 OF 23

U.S. EPA ID: MND045973419 TDD: F05-9001-057

PAN: FMN01875A

DATE: 5/9/90

TIME: 1105

DIRECTION OF PHOTOGRAPH:

NORTHWEST

WEATHER CONDITIONS:

OVERCAST, WIND ~10 MPH

~50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID (if applicable):

N/A



DESCRIPTION: THE SIGN AT ENTRANCE TO SITE.

DATE: 5/9/90

TIME: 1105

DIRECTION OF PHOTOGRAPH:

SOUTHWEST

WEATHER CONDITIONS:

OVERCAST, WIND ~10 MPH

~50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID (if applicable):

N/A



DESCRIPTION: THE OFFICE ENTRANCE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER & TOOL COMPANY

PAGE 2 OF 23

U.S. EPA ID: MND045973419 TDD: FOS-9001-057

PAN: FMJ01875A

DATE: 5/9/90

TIME: 1105

DIRECTION OF
PHOTOGRAPH:

SOUTH

WEATHER
CONDITIONS:

OVERCAST, WIND 10MPH,

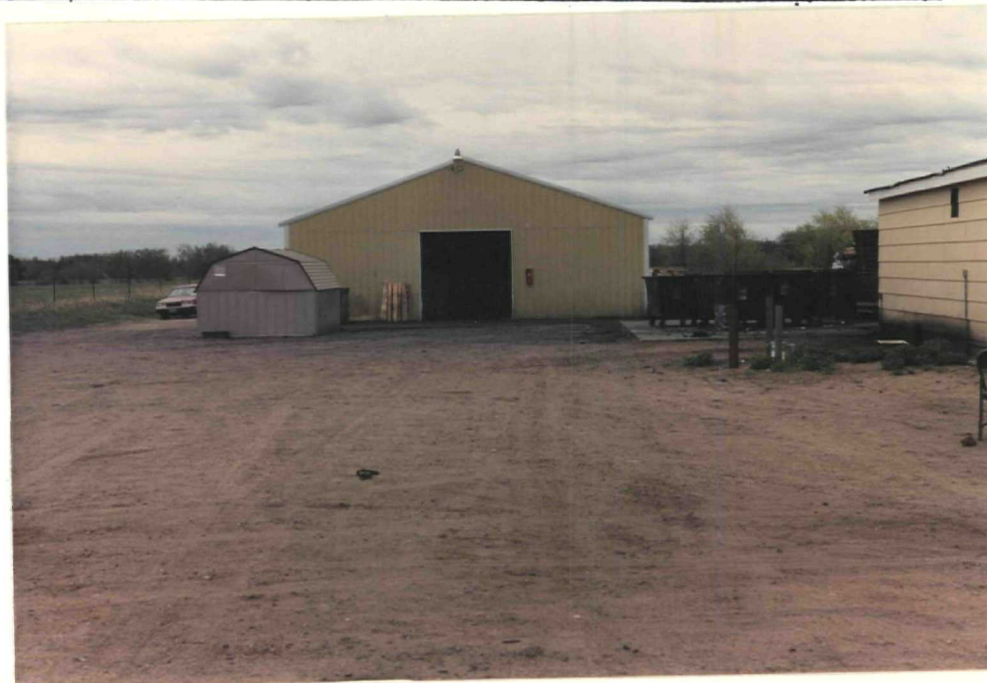
~50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

N/A



DESCRIPTION:

THE STORAGE SHED AND STORAGE GARAGE

DATE: 5/9/90

TIME: 1105

DIRECTION OF
PHOTOGRAPH:

SOUTH WEST

WEATHER
CONDITIONS:

OVERCAST, WIND ~10MPH,

~50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

N/A



DESCRIPTION:

THE EAST SIDE OF THE MAIN FACILITY BUILDING

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANY

PAGE 3 OF 23

U.S. EPA ID: MND045973419 TDD: F05-9001-057

PAN: FMN01875A

DATE: 5/9/90

TIME: 1100

DIRECTION OF
PHOTOGRAPH:

SOUTH

WEATHER
CONDITIONS:

OVERCAST, WIND ~10 MPH,

~50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

N/A

DESCRIPTION:

THE INSIDE OF THE STORAGE GARAGE.



DATE: 5/9/90

TIME: 1100

DIRECTION OF
PHOTOGRAPH:

SOUTH

WEATHER
CONDITIONS:

OVERCAST, WIND ~10 MPH

~50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

N/A

DESCRIPTION:

THE INSIDE OF THE STORAGE GARAGE.



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANY

PAGE 4 OF 23

U.S. EPA ID: MND045973419

TDD: F05-9001--057

PAN: FMN01875A

DATE: 5/9/90

TIME: 1025

DIRECTION OF
PHOTOGRAPH:

WEST

WEATHER
CONDITIONS:

OVERCAST, WIND ~ 10 MPH,

~ 50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

N/A

DESCRIPTION: 8 DRUMS ON EAST SIDE OF STORAGE GARAGE



DATE: 5/9/90

TIME: 1025

DIRECTION OF
PHOTOGRAPH:

SOUTH WEST

WEATHER
CONDITIONS:

OVERCAST, WIND ~ 10 MPH,

~ 50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

N/A

DESCRIPTION: COLORED LIQUID CONTAINED IN DRUM ON EAST SIDE OF STORAGE GARAGE.



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANY

PAGE 5 OF 23

U.S. EPA ID: MND045973419

TDD: F05-9001-057

PAN: FMN0187SA

DATE: > 5/9/90

TIME: > 1025

DIRECTION OF
PHOTOGRAPH:

> NORTHWEST

WEATHER
CONDITIONS:

> OVERCAST, WINDY 10MPH,

> ~ 50°F

PHOTOGRAPHED BY:

> K. SPANGLER

SAMPLE ID
(if applicable):

> N/A



DESCRIPTION: >

> PHOTO OF DROM CONTAINING OILY MATERIAL LOCATED ON EAST SIDE OF STORAGE GARAGE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 6 OF 23U.S. EPA ID: MND045973419 TDD: F05-9001-057PAN: FMN0187SADATE: 5/9/90TIME: 1025DIRECTION OF
PHOTOGRAPH:NORTHWESTWEATHER
CONDITIONS:OVERCAST, WIND ~ 10 MPH,~ 50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):N/ADESCRIPTION: FULL, LABELED DRUM (PERSPECTIVE) LOCATED ON EAST SIDE OF STORAGE
GARAGE.DATE: 5/9/90TIME: 1025DIRECTION OF
PHOTOGRAPH:NORTHWESTWEATHER
CONDITIONS:OVERCAST, WIND ~ 10 MPH~ 50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):N/ADESCRIPTION: FULL, LABELED DRUM (CLOSE-UP) LOCATED ON EAST SIDE OF STORAGE
GARAGE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 7 OF 23U.S. EPA ID: MND045973419 TDD: F05-9001-057PAN: FMN0187SADATE: 5/9/90TIME: 1105DIRECTION OF
PHOTOGRAPH:
SOUTHWESTWEATHER
CONDITIONS:
OVERCAST, WIND ~10 MPH,
~50°FPHOTOGRAPHED BY:
K. SPANGLERSAMPLE ID
(if applicable):
N/ADESCRIPTION: PHOTO OF NORTH SIDE OF OUTFALL POND AND SOUTH SIDE OF MAIN
FACILITY BUILDINGDATE: 5/9/90TIME: 1105DIRECTION OF
PHOTOGRAPH:
SOUTHWEATHER
CONDITIONS:
OVERCAST, WIND ~10 MPH,
~50°FPHOTOGRAPHED BY:
K. SPANGLERSAMPLE ID
(if applicable):
N/ADESCRIPTION: PHOTO OF SOUTH SIDE OF OUTFALL POND,

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 8 OF 23U.S. EPA ID: MND045973419 TOD: F05-9001-057PAN: FMND1875ADATE: 5/9/90TIME: 1100DIRECTION OF
PHOTOGRAPH:NORTHWESTWEATHER
CONDITIONS:OVERCAST, WIND ~10 MPH,~50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):N/ADESCRIPTION: THE SOUTHEAST SIDE OF THE MAIN FACILITY BUILDING.DATE: 5/9/90TIME: 1100DIRECTION OF
PHOTOGRAPH:NORTHWEATHER
CONDITIONS:OVERCAST, WIND ~10 MPH,~50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):N/ADESCRIPTION: PHOTO OF TOLUENE DRUMS IN STORAGE SHED.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 9 OF 23U.S. EPA ID: MND045973419 TDD: F05-9001-057PAN: FMJ0187SADATE: 5/9/90TIME: 1115DIRECTION OF
PHOTOGRAPH:SOUTHEASTWEATHER
CONDITIONS:OVERCAST, WIND ~ 10 MPH,
~ 50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):N/ADESCRIPTION: PHOTO OF BLACKENED AREA WHERE WASTE RUBBER HAS BEEN
INCINERATED IN THE PAST.DATE: 5/9/90TIME: 1115DIRECTION OF
PHOTOGRAPH:EASTWEATHER
CONDITIONS:OVERCAST, WIND ~ 10 MPH,
~ 50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):N/ADESCRIPTION: THE OUTFALL PIPE LOCATED ON THE NORTHWEST CORNER OF
THE OUTFALL POND.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANY

PAGE 10 OF 23

U.S. EPA ID: MND045973419

TDD: F05-9001-057

PAN: FMJ01875A

DATE: 5/9/90

TIME: 1100

DIRECTION OF
PHOTOGRAPH:
WEST

WEATHER
CONDITIONS:
OVERCAST, WIND ~ 10 MPH,
~ 50°F

PHOTOGRAPHED BY:
K. SPANGLER

SAMPLE ID
(if applicable):
N/A



DESCRIPTION: PHOTO OF A PORTION OF THE MAIN FACILITY BUILDING.

DATE: 5/9/90

TIME: 1110

DIRECTION OF
PHOTOGRAPH:
NORTH

WEATHER
CONDITIONS:
OVERCAST, WIND ~ 10 MPH,
~ 50°F

PHOTOGRAPHED BY:
K. SPANGLER

SAMPLE ID
(if applicable):
N/A



DESCRIPTION: PHOTO OF MAIN FACILITY BUILDINGS. FROM A SOUTHERN PERSPECTIVE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANY

PAGE 11 OF 23

U.S. EPA ID: MND045973419 TDD: F05-9001-057

PAN: FMN01875A

DATE: 5/9/90

TIME: 1110

DIRECTION OF
PHOTOGRAPH:

NORTH

WEATHER
CONDITIONS:OVERCAST, WIND ~ 10 MPH,
~ 50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

N/A

DESCRIPTION: VIEW OF LIQUID NITROGEN TANK, FACING NORTH.



DATE: 5/9/90

TIME: 1110

DIRECTION OF
PHOTOGRAPH:

SOUTH

WEATHER
CONDITIONS:OVERCAST, WIND ~ 10 MPH,
~ 50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

N/A

DESCRIPTION: VIEW OF LIQUID NITROGEN TANK, FACING SOUTH



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 12 OF 23U.S. EPA ID: MND045973419 TDD: F05-9001-057PAN: FMND187SADATE: 5/9/90TIME: 1215DIRECTION OF
PHOTOGRAPH:SOUTHEASTWEATHER
CONDITIONS:OVERCAST, WIND ~10 MPH,~50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):N/A

DESCRIPTION:

PHOTO OF PRARIE LOCATED SOUTH OF FACILITY BUILDINGS.DATE: 5/9/90TIME: 1215DIRECTION OF
PHOTOGRAPH:SOUTH WESTWEATHER
CONDITIONS:OVERCAST, WIND ~10 MPH,~50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):N/A

DESCRIPTION:

PHOTO OF PRARIE LOCATED SOUTH OF FACILITY BUILDINGS.

SITE NAME: STERN RUBBER AND TOOL COMPANY

PAGE 13 OF 23

U.S. EPA ID: MND045973419. TDD: F05-9001-057

PAN: FMN0187SA

DATE: 5/9/90

TIME: 1025

DIRECTION OF
PHOTOGRAPH:
WESTWEATHER
CONDITIONS:
OVERCAST, WIND ~10 MPH,
~50°FPHOTOGRAPHED BY:
K. SPANGLERSAMPLE ID
(if applicable):
S1DESCRIPTION: CLOSE-UP OF S1, TAKEN STAINED SOIL AROUND DRUMS
LOCATED ON THE EAST SIDE OF STORAGE GARAGE.

DATE: 5/9/90

TIME: 1025

DIRECTION OF
PHOTOGRAPH:
WESTWEATHER
CONDITIONS:
OVERCAST, WIND ~10 MPH,
~50°FPHOTOGRAPHED BY:
K. SPANGLERSAMPLE ID
(if applicable):
S1DESCRIPTION: PERSPECTIVE OF S1 AND DRUMS LOCATED ON EAST SIDE OF
STORAGE GARAGE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 14 OF 23U.S. EPA ID: MND045973419TDD: F05-9001-057PAN: FMN01875ADATE: 5/9/90TIME: 1020DIRECTION OF
PHOTOGRAPH: NEWEATHER
CONDITIONS: OVERCAST, WIND 10MPH, ~50°FPHOTOGRAPHED BY: K. SPANGLERSAMPLE ID
(if applicable): S2DESCRIPTION: CLOSE-UP OF S2,
TAKEN FROM THE BLACKENED AREADATE: 5/9/90TIME: 1020DIRECTION OF
PHOTOGRAPH:
NORTHEASTWEATHER
CONDITIONS:
OVERCAST, WIND 10MPH,
~50°FPHOTOGRAPHED BY:
K. SPANGLERSAMPLE ID
(if applicable):
S2DESCRIPTION: PERSPECTIVE OF S2, TAKEN FROM BLACKENED AREA

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERNA RUBBER AND TOOL COMPANY

PAGE 15 OF 23

U.S. EPA ID: MND045973419 TDD: F05-9001-057

PAN: FMN0187SA

DATE: 5/9/90

TIME: 1040

DIRECTION OF
PHOTOGRAPH:

NORTH

WEATHER
CONDITIONS:

OVERCAST, WIND ~10 MPH,

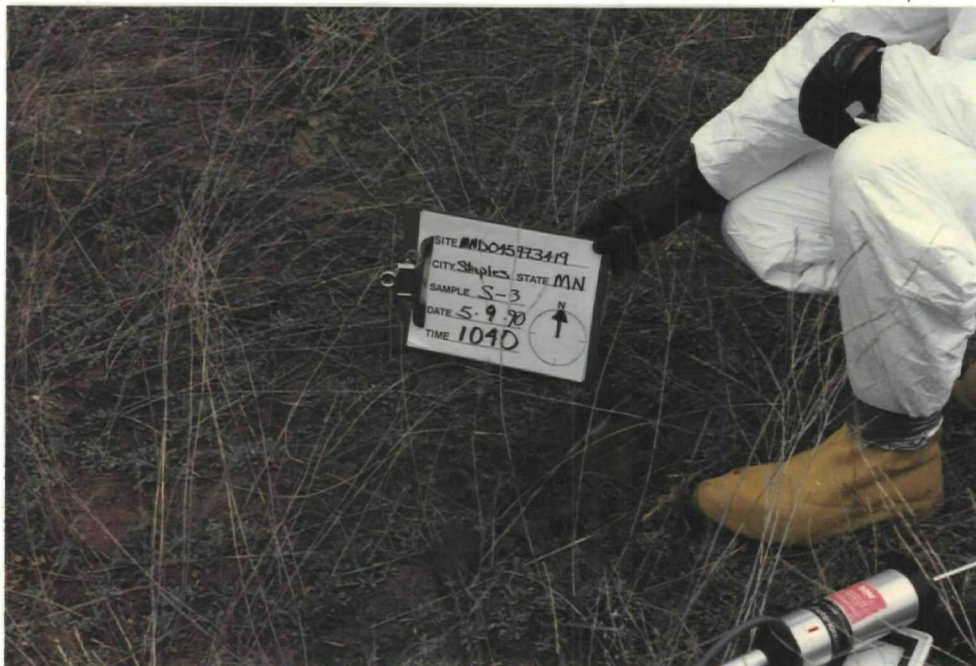
~50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

S3



DESCRIPTION: CLOSE-UP OF S3, LOCATED SOUTH OF MAIN FACILITY BUILDINGS.

DATE: 5/9/90

TIME: 1040

DIRECTION OF
PHOTOGRAPH:

N

WEATHER

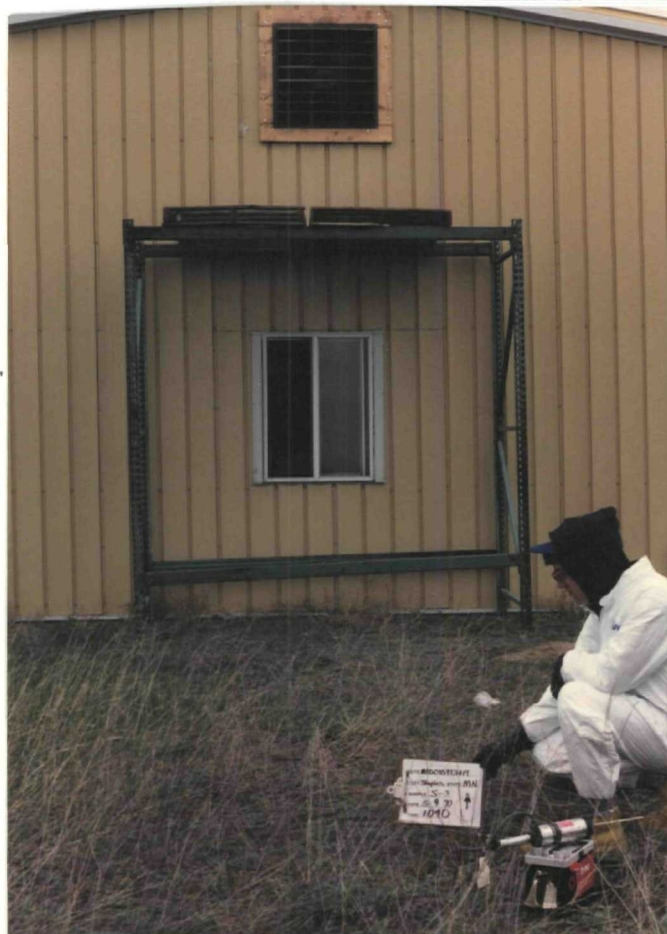
CONDITIONS: OVERCAST, WIND 10 MPH, ~50°F

PHOTOGRAPHED BY: K. SPANGLER

SAMPLE ID
(if applicable):

S3

DESCRIPTION: PERSPECTIVE OF S3,
LOCATED SOUTH OF MAIN FACILITY
BUILDINGS.



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 16 OF 23U.S. EPA ID: MND 045973419TDD: F05-9001-057PAN: FMN01875ADATE: 5/9/90TIME: 1045DIRECTION OF
PHOTOGRAPH: NW

WEATHER

CONDITIONS: OVERCAST, WIND ~10MPH,PHOTOGRAPHED BY: K. SPANGLER

SAMPLE ID

(if applicable): S4DESCRIPTION: CLOSE-UP OF S4,
LOCATED ON SOUTHEAST END OF
OUTFALL POND.DATE: 5/9/90TIME: 1045DIRECTION OF
PHOTOGRAPH:NORTHWEST

WEATHER

CONDITIONS:

OVERCAST, WIND ~10MPH,
~50°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID

(if applicable):

S4DESCRIPTION: PERSPECTIVE OF S4, LOCATED ON SOUTHEAST END OF OUTFALL POND,

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 17 OF 23U.S. EPA ID: MND045973419 TDD: F05-9001-057PAN: FMN0187SADATE: 5/9/90TIME: 1115DIRECTION OF
PHOTOGRAPH:EASTWEATHER
CONDITIONS:OVERCAST, WIND ~ 10 MPH,~ 50°F

PHOTOGRAPHED BY:

K. SPANGLERSAMPLE ID
(if applicable):S5DESCRIPTION: CLOSE-UP OF S5, LOCATED BELOW OUTFALL PIPE.DATE: 5/9/90TIME: 1115DIRECTION OF
PHOTOGRAPH:E

WEATHER

CONDITIONS: OVERCAST, WIND ~ 10 MPH,PHOTOGRAPHED BY: K. SPANGLERSAMPLE ID
(if applicable): S5DESCRIPTION: PERSPECTIVE OFS5, LOCATED BELOW OUTFALL
PIPE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 18 OF 23U.S. EPA ID: MND045973419TDD: F05-9001-057PAN: FMN0187SADATE: 5/9/90TIME: 1150DIRECTION OF
PHOTOGRAPH: S

WEATHER

CONDITIONS: OVERCAST, WIND ~ 10 MPH, ~ 50°FPHOTOGRAPHED BY: K. SPANGLERSAMPLE ID
(if applicable): S6DESCRIPTION: CLOSE-UP OF S6,
LOCATED IN DRAINAGE DITCH WEST
OF FACILITY BUILDINGS.DATE: 5/9/90TIME: 1150DIRECTION OF
PHOTOGRAPH: SOUTH

WEATHER

CONDITIONS: OVERCAST, WIND ~ 10 MPH,
~ 50°FPHOTOGRAPHED BY: K. SPANGLERSAMPLE ID
(if applicable): S6DESCRIPTION: PERSPECTIVE OF S6, LOCATED IN DRAINAGE DITCH WEST OF
FACILITY BUILDINGS.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANYPAGE 19 OF 23U.S. EPA ID: MND045973419TDD: F05-9001-057PAN: FMN0187SADATE: 5/9/90TIME: 1210DIRECTION OF
PHOTOGRAPH:
NORTHWEATHER
CONDITIONS:
OVERCAST, WIND 10MPH,
~50°FPHOTOGRAPHED BY:
K. SPANGLERSAMPLE ID
(if applicable):
S7DESCRIPTION: CLOSE-UP OF S7, LOCATED IN PRARIE SOUTH OF FACILITY
BUILDINGS.DATE: 5/9/90TIME: 1210DIRECTION OF
PHOTOGRAPH: NWEATHER
CONDITIONS: OVERCAST, WIND 10MPH, ~50°FPHOTOGRAPHED BY: K. SPANGLERSAMPLE ID
(if applicable): S7DESCRIPTION: PERSPECTIVE OF S7,
LOCATED IN PRARIE SOUTH OF
FACILITY BUILDINGS.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANY

PAGE 20 OF 23

U.S. EPA ID: MND045973419

TDD: F05-9001-057

PAN: FMN0187SA

DATE: 5/9/90

TIME: 1240

DIRECTION OF
PHOTOGRAPH:
SOUTH

WEATHER
CONDITIONS:
OVERCAST, WIND ~ 10 MPH,
~ 50°F

PHOTOGRAPHED BY:
K. SPANGLER

SAMPLE ID
(if applicable):
S8



DESCRIPTION: LOSE-UP OF S8, LOCATED APPROXIMATELY 1 MILE WEST OF
STERN SITE.

DATE: 5/9/90

TIME: 1240

DIRECTION OF
PHOTOGRAPH: S

WEATHER
CONDITIONS: OVERCAST, WIND ~ 10 MPH, ~ 50°F

PHOTOGRAPHED BY: K. SPANGLER

SAMPLE ID
(if applicable): S8

DESCRIPTION: PERSPECTIVE OF S8,
LOCATED APPROXIMATELY 1 MILE
WEST OF STERN SITE.



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN TOOL AND RUBBER COMPANY

PAGE 21 OF 23

U.S. EPA ID: MND045973419

TDD: F05-9001-057

PAN: FMN0187SA

DATE: > 5/10/90

TIME: > 1040

DIRECTION OF
PHOTOGRAPH:

> SOUTH

WEATHER
CONDITIONS:

> SUNNY, WINDY 15 MPH,

> ~45°F

PHOTOGRAPHED BY:

> K. SPANGLER

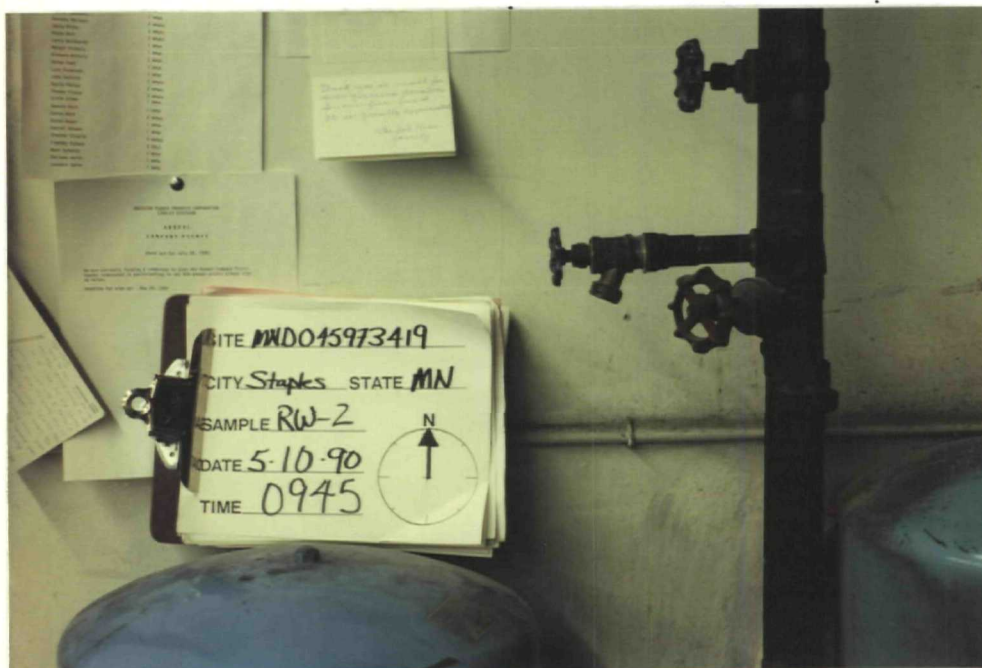
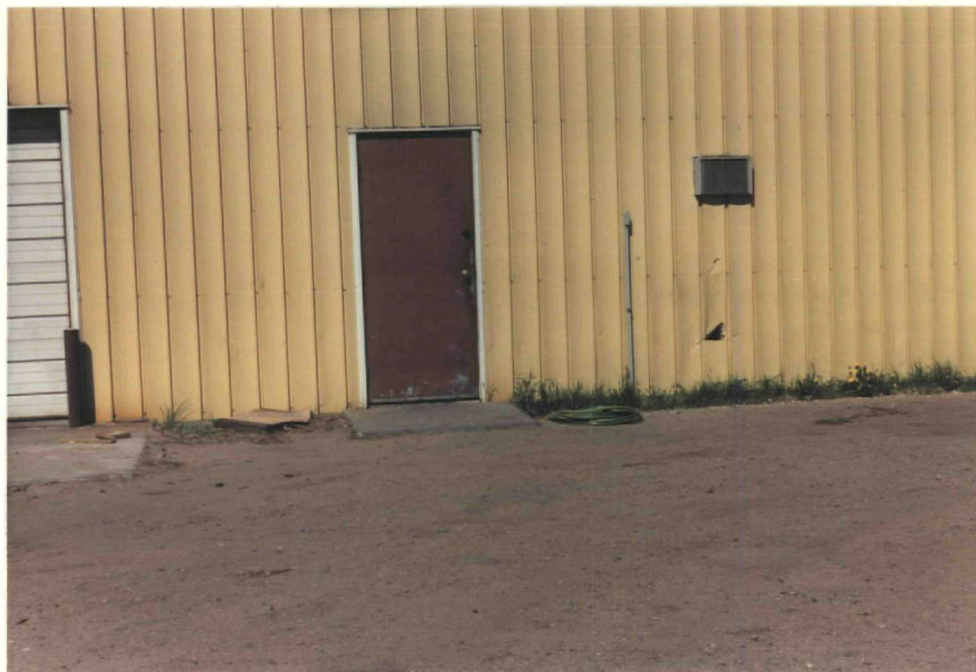
SAMPLE ID
(if applicable):

> RW1



DESCRIPTION: > RESIDENTIAL WELL 1 PERSPECTIVE PHOTOGRAPH, LOCATED

> APPROXIMATELY 1/2 MILE SOUTHEAST OF STERN SITE.

SITE NAME: STERIL RUBBER AND TOOL COMPANYPAGE 22 OF 23U.S. EPA ID: MND045973419 TDD: F05-9001-057PAN: FMN0187SADATE: 5/10/90TIME: 1035DIRECTION OF
PHOTOGRAPH:
NORTHWEATHER
CONDITIONS:
SUNNYWIND ~15MPH, ~45°FPHOTOGRAPHED BY:
K. SPANGLERSAMPLE ID
(if applicable):
RW-2DESCRIPTION: RESIDENTIAL WELL 2 INDOOR PHOTOGRAPH, ON-SITE WELL.DATE: 5/10/90TIME: 1035DIRECTION OF
PHOTOGRAPH:
WESTWEATHER
CONDITIONS:
SUNNY, WIND ~15MPH,
~45°FPHOTOGRAPHED BY:
K. SPANGLERSAMPLE ID
(if applicable):
RW-2DESCRIPTION: RESIDENTIAL WELL 2 OUTDOOR PHOTOGRAPH, ON-SITE WELL.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: STERN RUBBER AND TOOL COMPANY

PAGE 23 OF 23

U.S. EPA ID: MND045973419

TDD: F05-9001-057

PAN: FMN01875A

DATE: 5/10/90

TIME: 1038

DIRECTION OF
PHOTOGRAPH:

NORTH

WEATHER
CONDITIONS:

SUNNY, WIND ~15 MPH,

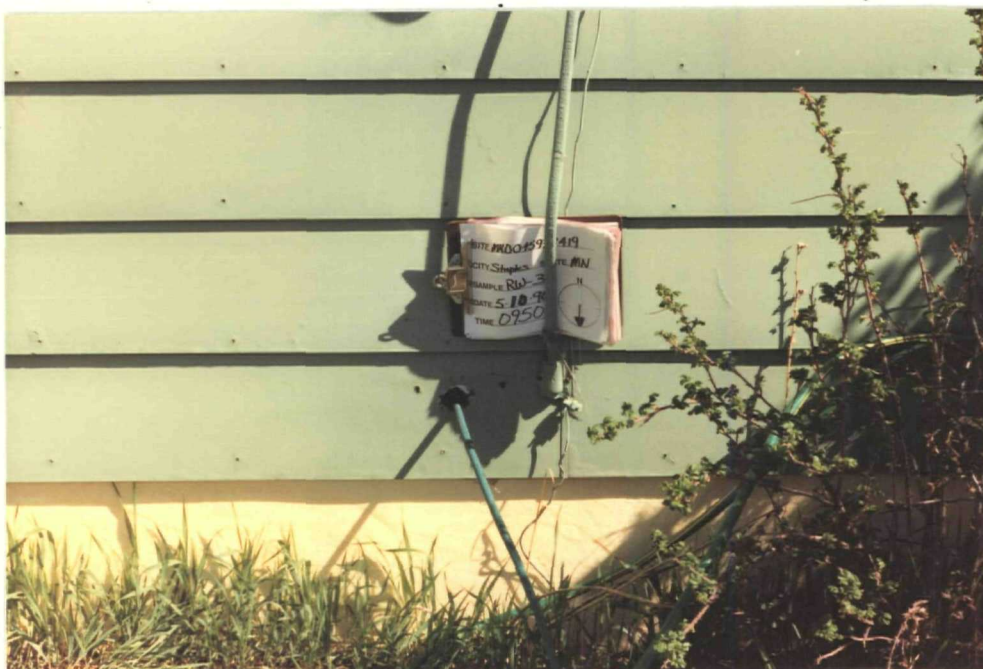
~45°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

RW-3

DESCRIPTION: RESIDENTIAL WELL 3 OUTSIDE CLOSE-UP PHOTOGRAPH, LOCATED
APPROXIMATELY 500 FEET NORTHWEST OF STERN SITE.

DATE: 5/10/90

TIME: 1038

DIRECTION OF
PHOTOGRAPH:

NORTH

WEATHER
CONDITIONS:

SUNNY, WIND ~15 MPH,

~45°F

PHOTOGRAPHED BY:

K. SPANGLER

SAMPLE ID
(if applicable):

RW 3

DESCRIPTION: RESIDENTIAL WELL 3 PERSPECTIVE PHOTOGRAPH, LOCATED
APPROXIMATELY 500 FEET NORTHWEST OF STERN SITE.

APPENDIX D

U.S. EPA TARGET COMPOUND LIST AND
TARGET ANALYTE LIST
QUANTITATION/DETECTION LIMITS

ADDENDUM A

**ROUTINE ANALYTICAL SERVICES
CONTRACT REQUIRED DETECTION AND QUANTITATION LIMITS**

Contract Laboratory Program
Target Compound List
Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
Chloromethane	74-87-3	10 ug/L	10 ug/Kg
Bromomethane	74-83-9	10	10
Vinyl chloride	75-01-4	10	10
Chloroethane	75-00-3	10	10
Methylene chloride	75-09-2	5	5
Acetone	67-64-1	10	5
Carbon disulfide	75-15-0	5	5
1,1-dichloroethene	75-35-4	5	5
1,1-dichloroethane	75-34-3	5	5
1,2-dichloroethene (total)	540-59-0	5	5
Chloroform	67-66-3	5	5
1,2-dichloroethane	107-06-2	5	5
2-butanone (MEK)	78-93-3	10	10
1,1,1-trichloroethane	71-55-6	5	5
Carbon tetrachloride	56-23-5	5	5
Vinyl acetate	108-05-4	10	10
Bromodichloromethane	75-27-4	5	5
1,2-dichloropropane	78-87-5	5	5
cis-1,3-dichloropropene	10061-01-5	5	5
Trichloroethene	79-01-6	5	5
Dibromochloromethane	124-48-1	5	5
1,1,2-trichloroethane	79-00-5	5	5
Benzene	71-43-2	5	5
Trans-1,3-dichloropropene	10061-02-6	5	5
Bromoform	75-25-2	5	5
4-Methyl-2-pentanone	108-10-1	10	10
2-Hexanone	591-78-6	10	10
Tetrachloroethene	127-18-4	5	5
Toluene	108-88-3	5	5
1,1,2,2-tetrachloroethane	79-34-5	5	5
Chlorobenzene	108-90-7	5	5
Ethyl benzene	100-41-4	5	5
Styrene	100-42-5	5	5
Xylenes (total)	1330-20-7	5	5

Table A
Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
Phenol	108-95-2	10 ug/L	330 ug/Kg
bis(2-Chloroethyl) ether	111-44-4	10	330
2-Chlorophenol	95-57-8	10	330
1,3-Dichlorobenzene	541-73-1	10	330
1,4-Dichlorobenzene	106-46-7	10	330
Benzyl Alcohol	100-51-6	10	330
1,2-Dichlorobenzene	95-50-1	10	330
2-Methylphenol	95-48-7	10	330
bis(2-Chloroisopropyl) ether	108-60-1	10	330
4-Methylphenol	106-44-5	10	330
N-Nitroso-di-n-dipropylamine	621-64-7	10	330
Hexachloroethane	67-72-1	10	330
Nitrobenzene	98-95-3	10	330
Isophorone	78-59-1	10	330
2-Nitrophenol	88-75-5	10	330
2,4-Dimethylphenol	105-67-9	10	330
Benzoic Acid	65-85-0	50	1600
bis(2-Chloroethoxy) methane	111-91-1	10	330
2,4-Dichlorophenol	120-83-2	10	330
1,2,4-Trichlorobenzene	120-82-1	10	330
Naphthalene	91-20-3	10	330
4-Chloroaniline	106-47-8	10	330
Hexachlorobutadiene	87-68-3	10	300
4-Chloro-3-methylphenol	59-50-7	10	330
2-Methylnaphthalene	91-57-6	10	330
Hexachlorocyclopentadiene	77-47-4	10	330
2,4,6-Trichlorophenol	88-06-2	10	330
2,4,5-Trichlorophenol	95-95-4	50	1600
2-Chloronaphthalene	91-58-7	10	330
2-Nitroaniline	88-74-4	50	1600
Dimethylphthalate	131-11-3	10	330
Acenaphthylene	208-96-8	10	330
2,6-Dinitrotoluene	606-20-2	10	330
3-Nitroaniline	99-09-2	50	1600
Acenaphthene	83-32-9	10	330
2,4-Dinitrophenol	51-28-5	50	1600
4-Nitrophenol	100-02-7	50	1600
Dibenzofuran	132-64-9	10	330
2,4-Dinitrotoluene	121-14-2	10	330
Diethylphthalate	84-66-2	10	330
4-Chlorophenyl-phenyl ether	7005-72-3	10	330

Table A
Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SLUDGE SEDIMENT
Fluorene	86-73-7	10 ug/L	330 ug/Kg
4-Nitroaniline	100-01-6	50	1600
4,6-Dinitro-2-methylphenol	534-52-1	50	1600
N-nitrosodiphenylamine	86-30-6	10	330
4-Bromophenyl-phenylether	101-55-3	10	330
Hexachlorobenzene	118-74-1	10	330
Pentachlorophenol	87-86-5	50	1600
Phenanthrene	85-01-8	10	330
Anthracene	120-12-7	10	330
Di-n-butylphthalate	84-74-2	10	330
Fluoranthene	206-44-0	10	330
Pyrene	129-00-0	10	330
Butylbenzylphthalate	85-68-7	10	330
3,3'-Dichlorobenzidine	91-94-1	20	660
Benzo(a)anthracene	56-55-3	10	330
Chrysene	218-01-9	10	330
bis(2-Ethylhexyl)phthalate	117-81-7	10	330
Di-n-octylphthalate	117-84-0	10	330
Benzo(b)fluoranthene	205-99-2	10	330
Benzo(k)fluoranthene	207-08-9	10	330
Benzo(a)pyrene	50-32-8	10	330
Indeno(1,2,3-cd)pyrene	193-39-5	10	330
Dibenz(a,h)anthracene	53-70-3	10	330
Benzo(g,h,i)perylene	191-24-2	10	330

Table A
Contract Laboratory Program
Target Compound List
Pesticide and PCB Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
alpha-BHC	319-84-6	0.05 ug/L	8 ug/Kg
beta-BHC	319-85-7	0.05	8
delta-BHC	319-86-8	0.05	8
gamma-BHC (Lindane)	58-89-9	0.05	8
Heptachlor	76-44-8	0.05	8
Aldrin	309-00-2	0.05	8
Heptachlor epoxide	1024-57-3	0.05	8
Endosulfan I	959-98-8	0.05	8
Dieldrin	60-57-1	0.10	16
4,4'-DDE	72-55-9	0.10	16
Endrin	72-20-8	0.10	16
Endosulfan II	33213-65-9	0.10	16
4,4'-DDD	72-54-8	0.10	16
Endosulfan sulfate	1031-07-8	0.10	16
4,4'-DDT	50-29-3	0.10	16
Methoxychlor (Mariate)	72-43-5	0.5	80
Endrin ketone	53494-70-5	0.10	16
alpha-Chlordane	5103-71-9	0.5	80
gamma-chlordane	5103-74-2	0.5	80
Toxaphene	8001-35-2	1.0	160
AROCLOR-1016	12674-11-2	0.5	80
AROCLOR-1221	11104-28-2	0.5	80
AROCLOR-1232	11141-16-5	0.5	80
AROCLOR-1242	53469-21-9	0.5	80
AROCLOR-1248	12672-29-6	0.5	80
AROCLOR-1254	11097-69-1	1.0	160
AROCLOR-1260	11096-82-5	1.0	160

Table A (Cont.)

CONTRACT LABORATORY PROGRAM
 TARGET ANALYTE LIST (TAL)
 INORGANIC DETECTION LIMITS

Compound	Procedure	Detection Limits	
		Water (µg/L)	Soil Sediment Sludge (mg/kg)
aluminum	ICP	200	40
antimony	furnace	60	2.4
arsenic	furnace	10	2
barium	ICP	200	40
beryllium	ICP	5	1
cadmium	ICP	5	1
calcium	ICP	5,000	1,000
chromium	ICP	10	2
cobalt	ICP	50	10
copper	ICP	25	5
iron	ICP	100	20
lead	furnace	5	1
magnesium	ICP	5,000	1,000
manganese	ICP	15	3
mercury	cold vapor	0.2	0.008
nickel	ICP	40	8
potassium	ICP	5,000	1,000
selenium	furnace	5	1
silver	ICP	10	2
sodium	ICP	5,000	1,000
thallium	furnace	10	2
tin	ICP	40	8
vanadium	ICP	50	10
zinc	ICP	20	4
cyanide	color	10	2

3767:1

ADDENDUM B

**CENTRAL REGIONAL LABORATORY
DETECTION LIMITS**

TABLE B
CENTRAL REGIONAL LABORATORY
VOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT IN REAGENT WATER
Benzene	71-43-2	1.5 ug/L
Bromodichloromethane	75-27-4	1.5
Bromoform	75-25-2	1.5
Bromomethane	74-83-9	10
Carbon tetrachloride	56-23-5	1.5
Chlorobenzene	108-90-7	1.5
Chloroethane	75-00-3	1.5
2-Chloroethyl vinyl ether	110-75-8	1.5
Chloroform	67-66-3	1.5
Chloromethane	74-87-3	10
Dibromochloromethane	124-48-1	1.5
1,1-dichloroethane	75-34-3	1.5
1,2-dichloroethane	107-06-2	1.5
1,1-dichloroethene	75-35-4	1.5
Total-1,2-dichloroethene	540-59-0	1.5
1,2-dichloropropane	78-87-5	1.5
cis-1,3-dichloropropene	10061-01-5	2
trans-1,3-dichloropropene	10061-02-6	1
Ethyl benzene	100-41-4	1.5
Methylene chloride*	75-09-2	1
1,1,2,2-tetrachloroethane	79-34-5	1.5
Tetrachloroethene	127-18-4	1.5
Toluene*	108-88-3	1.5
1,1,1-trichloroethane	71-55-6	1.5
1,1,2-trichloroethane	79-00-5	1.5
Trichloroethene	79-01-6	1.5
Vinyl chloride	75-01-4	10
Acrolein	107-02-8	100
Acetone*	67-64-1	75
Acrylonitrile	107-13-1	50
Carbon disulfide	75-15-0	3
2-butanone	78-93-3	(50)
Vinyl acetate	108-05-4	15
4-Methyl-2-Pentanone	108-10-1	(3)
2-Hexanone	519-78-6	(50)
Styrene	100-42-5	1
m-xylene	108-38-3	2
o-xylene**	95-47-6	
p-xylene**	106-42-3	2.5**
Total Xylene	1330-02-7	

* Common Laboratory Solvents.

Blank Limit is 5X Method Detection Limit.

() Values in parentheses are estimates.

Actual values are being determined at this time.

** The o-xylene and p-xylene are reported as a total of the two.

TABLE B (cont.)
CRL
SEMIVOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	BLANK LIMIT
Aniline	62-53-3	1.5 ug/L	3 ug/L
Bis(2-chloroethyl)ether	111-44-4	1.5	3
Phenol	108-95-2	2	4
2-Chlorophenol	95-57-8	2	4
1,3-Dichlorobenzene	541-73-1	2	4
1,4-Dichlorobenzene	106-46-7	2	4
1,2-Dichlorobenzene	95-50-1	2.5	5
Benzyl alcohol	100-51-6	2	4
Bis(2-chloroisopropyl) ether	39638-32-9	2.5	5
2-Methylphenol	95-48-7	1	2
Hexachloroethane	67-72-1	2	4
N-nitrosodipropylamine	621-64-7	1.5	3
Nitrobenzene	98-95-3	2.5	5
4-Methylphenol	106-44-5	1	2
Isophorone	78-59-1	2.5	5
2-Nitrophenol	88-75-5	2	4
2,4-Dimethylphenol	105-67-9	2	4
Bis(2-chloroethoxy)methane	111-91-1	2.5	5
2,4-Dichlorophenol	120-83-2	2	4
1,2,4-Trichlorobenzene	120-82-1	2	4
Naphthalene	91-20-3	2	4
4-Chloroaniline	106-47-8	2	4
Hexachlorobutadiene	87-68-3	2.5	5
Benzoic acid	65-85-0	(30)	(60)
2-Methylnapthalene	91-57-6	2	4
4-Chloro-3-methylphenol	59-50-7	1.5	3
Hexachlorocyclopentadiene	77-47-4	2	4
2,4,6-Trichlorophenol	88-06-2	1.5	3
2,4,5-Trichlorophenol	95-95-4	1.5	3
2-Chloronapthalene	91-58-7	1.5	3
Acenaphthylene	208-96-8	1.5	3
Dimethyl phthalate	131-11-3	1.5	3
2,6-Dinitrotoluene	606-20-2	1	2
Acenaphthene	83-32-9	1.5	3
3-Nitroaniline	99-09-2	2.5	5
Dibenzofuran	132-64-9	1	2
2,4-Dinitrophenol	51-28-5	(15)	(30)
2,4-Dinitrotoluene	121-14-2	1	2
cont.			

TABLE B (Cont.)
CRL
SEMIVOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	BLANK (a) LIMIT
Fluorene	86-73-7	1 ug/L	2 ug/L
4-Nitrophenol	100-02-7	1.5	3
4-Chlorophenyl phenyl ether	7005-72-3	1	2
Diethylphthalate	84-66-2	1	2
4,6-dinitro-2-methylphenol	534-52-1	(15)	(30)
1,2-Diphenylhydrazine	122-66-7	1	2
n-Nitrosodiphenylamine *	86-30-6		
Diphenylamine *	122-39-4	1.5	3
4-Nitroaniline	100-01-6	3	6
4-Bromophenyl-phenylether	101-55-3	1.5	3
Hexachlorobenzene	118-74-1	1.5	3
Pentachlorophenol	87-86-5	2	4
Phenanthrene	85-01-8	1	2
Anthracene	120-12-7	2.5	5
Di-n-butylphthalate	84-74-2	2	4
Fluoranthene	206-44-0	1.5	3
Pyrene	129-00-0	1.5	3
Butylbenzylphthalate	85-68-7	3.5	7
Chrysene **	218-01-9		
Benzo(a)anthracene **	56-55-3	1.5	3
bis(2-Ethylhexyl)phthalate	117-81-7	1	2
Di-n-octyl phthalate	117-84-0	1.5	3
Benzo(b)fluoranthene ***	205-99-2		
Benzo(k)fluoranthene ***	207-08-9	1.5	3
Benzo(a)pyrene	50-32-8	2	4
Indeno(1,2,3-cd)pyrene	193-39-5	3.5	7
Dibenzo(a,h)anthracene	53-70-3	2.5	5
Benzo(g,h,i)perylene	191-24-2	4	8
2-Nitroaniline	88-74-4	1	2

* These two parameters are reported as a total.

** These two parameters are reported as a total.

*** These two parameters are reported as a total.

(a) If the blank limit is exceeded, the sample is reextracted and rerun.

() Values in parentheses are estimates.

The actual values are being determined at this time.

Note: Limits are for reagent water.

TABLE B (Cont.)
CRL
PESTICIDE AND PCB DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Aldrin	309-00-2	0.005 ug/L
alpha BHC	319-84-6	(0.010)
beta BHC	319-85-7	(0.005)
delta BHC	319-86-8	(0.005)
gama BHC (Lindane)	58-89-9	0.005
Chlordane	57-74-8	(0.020)
4,4'-DDD	72-54-8	(0.020)
4,4'-DDE	72-55-9	(0.005)
4,4'-DDT	50-29-3	0.020
Dieldrin	60-57-1	0.010
Endosulfan I	959-98-8	0.010
Endosulfan II	33213-65-9	0.010
Endosulfan sulfate	1031-07-8	(0.10)
Endrin	72-20-8	0.010
Endrin aldehyde	7421-93-4	(0.030)
Endrin ketone	53454-70-5	(0.030)
Heptachlor	76-44-8	0.030
Heptachlor epoxide	1024-57-3	0.005
4,4'-Methoxychlor	72-43-5	0.020
Toxaphene	8001-35-2	(0.25)
PCB-1242	53469-21-9	(0.10)
PCB-1248	12672-29-6	(0.10)
PCB-1254	11097-69-1	(0.10)
PCB-1260	11096-82-5	(0.10)

() Values in parentheses are estimates.
Actual values are being determined at this time.

Note: Limits are for reagent water.

TABLE B (Cont.)
CRL
INORGANIC DETECTION LIMITS

COMPOUND	PROCEDURE	DETECTION LIMITS	RANGE	UNITS
Aluminum	ICP	100	80 to 1,000,000	ug/L
Antimony	Furnace	2	2 to 30	ug/L
Arsenic	Furnace	2	2 to 30	ug/L
Barium	ICP	50	6 to 20,000	ug/L
Beryllium	ICP	5	1 to 20,000	ug/L
Boron	ICP	80	80 to 20,000	ug/L
Cadmium	ICP	10	10 to 20,000	ug/L
Cadmium	Furnace	0.2	0.2 to 2	ug/L
calcium	ICP	1000	0.5 to 1,000	ng/L
Chromium	ICP	10	8 to 20,000	ug/L
Cobalt	ICP	10	6 to 20,000	ug/L
Copper	ICP	10	6 to 20,000	ug/L
iron	ICP	100	80 to 1,000,000	ug/L
Lead	Furnace	2	2 to 30	ug/L
Lead	ICP	70	70 to 20,000	ug/L
Lithium	ICP	10	10 to 20,000	ug/L
Magnesium	ICP	1000	0.1 to 200	ng/L
Maganese	ICP	10	5 to 20,000	ug/L
Mercury	Cold vapor	0.2	0.1 to 2	ug/L
Molybdenum	ICP	15	15 to 20,000	ug/L
Nickel	ICP	20	15 to 20,000	ug/L
Potassium	ICP	2000	5 to 1,000	ng/L
Selenium	Furnace	2	2 to 30	ug/L
Silver	ICP	5	6 to 10,000	ug/L
Sodium	ICP	1000	1 to 1,000	ng/L
Strontium	ICP	10	10 to 20,000	ug/L
Sulfide	Titration	1	< 1	ng/L
Sulfide	Color	0.05	< 1	ng/L
Thallium	Furnace	2	2 to 30	ug/L
Titanium	ICP	25	25 TO 20,000	UG/L
Tin	ICP	40	40 to 20,000	ug/L
Vanadium	ICP	10	5 to 20,000	ug/L
Yttrium	ICP	5	5 to 20,000	ug/L
Zinc	ICP	20	40 to 1,000,000	ug/L
Cyanide	AA	5.0	8 to 200	ug/L

Note: The above list may or may not contain compounds that are routinely analyzed at CRL for low level detection limits for drinking water.

See inorganic Routine Analytical Services for related CAS #.

ADDENDUM C

SPECIAL ANALYTICAL SERVICES
DETECTION LIMITS

Drinking Water Samples

TABLE C
SPECIAL ANALYTICAL SERVICES DRINKING WATER
VOLATILE QUANTITATION LIMITS

PARAMETER	CAS #	DETECTION LIMIT IN REAGENT WATER
Benzene	71-43-2	1.5 ug/L
Bromodichloromethane	75-27-4	1.5
Bromoform	75-25-2	1.5
Bromomethane	74-83-9	1.5
Carbon tetrachloride	56-23-5	1.5
Chlorobenzene	108-90-7	1.5
Chloroethane	75-00-3	1.5
2-Chloroethyl vinyl ether	110-75-8	1.5
Chloroform	67-66-3	1.5
Chloromethane	74-87-3	1.5
Dibromochloromethane	124-48-1	1.5
1,1-Dichloroethane	75-34-3	1.5
1,2-Dichloroethane	107-06-2	1.5
1,1-Dichloroethene	75-35-4	1.5
Total-1,2-Dichloroethene	540-59-0	1.5
1,2-Dichloropropane	78-87-5	1.5
cis-1,3-Dichloropropene	10061-01-5	2
trans-1,3-Dichloropropene	10061-02-6	1
Ethyl benzene	100-41-4	1.5
Methylene chloride *	75-09-2	1
1,1,2,2-Tetrachloroethane	79-34-5	1.5
Tetrachloroethene	127-18-4	1.5
Toluene *	108-88-3	1.5
1,1,1-Trichloroethane	71-55-6	1.5
1,1,2-Trichloroethane	79-00-5	1.5
Trichloroethene	79-01-6	1.5
Vinyl chloride	75-01-4	1.5
Acrolein	107-02-8	25
Acetone *	67-64-1	5
Acrylonitrile	107-13-1	25
Carbon disulfide	75-15-0	3
2-Butanone	78-93-3	5
Vinyl acetate	108-05-4	5
4-Methyl-2-pentanone	108-10-1	1.5
2-Hexanone	519-78-6	5
Styrene	100-42-5	1
Xylene (total)	1330-02-7	1.5

* Common laboratory solvents.

Blank limit is 5x method detection limit.

() Values in parentheses are estimates.

actual values are being determined at this time.

TABLE C (cont.)
SAS DRINKING WATER
SEMIVOLATILES QUANTITATION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Aniline	62-53-3	1.5 ug/l
Bis(2-chloroethyl)ether	111-44-4	1.5
Phenol	108-95-2	2
2-Chlorophenol	95-57-8	2
1,3-Dichlorobenzene	541-73-1	2
1,4-Dichlorobenzene	106-46-7	2
1,2-Dichlorobenzene	95-50-1	2.5
Benzyl alcohol	100-51-6	2
Bis(2-chloroisopropyl)ether	39638-32-9	2.5
2-Methylphenol	95-48-7	1
Hexachloroethane	67-72-1	2
n-Nitrosodipropylamine	621-64-7	1.5
Nitrobenzene	98-95-3	2.5
4-Methylphenol	106-44-5	1
Isophorone	78-59-1	2.5
2-Nitrophenol	88-75-5	2
2,4-Dimethylphenol	105-67-9	2
Bis(2-Chloroethoxy)methane	111-91-1	2.5
2,4-Dichlorophenol	120-83-2	2
1,2,4-Trichlorobenzene	120-82-1	2
Naphthalene	91-20-3	2
4-Chloroaniline	106-47-8	2
Hexachlorobutadiene	87-68-3	2.5
Benzoic Acid	65-85-0	20
2-Methylnaphthalene	91-57-6	2
4-Chloro-3-methylphenol	59-50-7	1.5
Hexachlorocyclopentadiene	77-47-4	2
2,4,6-Trichlorophenol	88-06-2	1.5
2,4,5-Trichlorophenol	95-95-4	1.5
2-Chloronaphthalene	91-58-7	1.5
Acenaphthylene	208-96-8	1.5
Dimethyl phthalate	131-11-3	1.5
2,6-Dinitrotoluene	606-20-2	1
Acenaphthene	83-32-9	1.5
3-Nitroaniline	99-09-2	2.5
Dibenzofuran	132-64-9	1
2,4-Dinitrophenol	51-28-5	(15)
2,4-Dinitrotoluene	121-14-2	1

TABLE C (Cont.)
SAS DRINKING WATER
SEMIVOLATILE QUANTITATION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Fluorene	86-73-7	1 ug/L
4-Nitrophenol	100-02-7	1.5
4-Chlorophenyl phenyl ether	7005-72-3	1
Diethyl phthalate	84-66-2	1
4,6-Dinitro-2-methylphenol	534-52-1	(15)
1,2-Diphenylhydrazine	122-66-7	1
n-Nitrosodiphenylamine *	86-30-6	
Diphenylamine *	122-39-4	1.5
4-Nitroaniline	100-01-6	3
4-Bromophenyl-phenylether	101-55-3	1.5
Hexachlorobenzene	118-74-1	1.5
Pentachlorophenol	87-86-5	2
Phenanthrene	85-01-8	1
Anthracene	120-12-7	2.5
di-n-Butyl phthalate	84-74-2	2
Fluoranthene	206-44-0	1.5
Pyrene	129-00-0	1.5
Butyl benzyl phthalate	85-68-7	3.5
Chrysene **	218-01-9	
Benzo(A)Anthracene **	56-55-3	1.5
bis(2-ethylhexyl)phthalate	117-81-7	1
di-n-Octyl phthalate	117-84-0	1.5
Benzo(b)fluoranthene ***	205-99-2	
Benzo(k)fluoranthene ***	207-08-9	1.5
Benzo(a)pyrene	50-32-8	2
Indeno(1,2,3-cd)pyrene	193-39-5	3.5
Dibenzo(a,h)anthracene	53-70-3	2.5
Benzo(g,h,i)perylene	191-24-2	4
2-Nitroaniline	88-74-4	1

* These two parameters are reported as a total.

** These two parameters are reported as a total.

*** These two parameters are reported as a total.

() Values in parentheses are estimates.

The actual values are being determined at this time.

Note: Limits are for reagent water.

TABLE C (Cont.)
SAS DRINKING WATER
PESTICIDE AND PCB QUANTITATION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Aldrin	309-00-2	0.005 ug/L
alpha BHC	319-84-6	0.010
beta BHC	319-85-7	0.005
delta BHC	319-86-8	0.005
gamma BHC (Lindane)	58-89-9	0.005
alpha-Chlordane	5103-71-9	0.020
gamma-Chlordane	5103-74-2	0.020
4,4'-DDD	72-54-8	0.020
4,4'-DDE	72-55-9	0.005
4,4'-DDT	50-29-3	0.020
Dieldrin	60-57-1	0.010
Endosulfan I	959-98-8	0.010
Endosulfan II	33213-65-9	0.010
Endosulfan sulfate	1031-07-8	0.10
Endrin	72-20-8	0.010
Endrin Aldehyde	7421-93-4	(0.030)
Endrin Ketone	53494-70-5	0.030
Heptachlor	76-44-8	0.030
Heptachlor Epoxide	1024-57-3	0.005
4,4'-Methoxychlor	72-43-5	0.020
Toxaphene	8001-35-2	0.25
Aroclor-1016	12674-11-2	0.10
Aroclor-1221	11104-28-2	0.10
Aroclor-1232	11141-16-5	0.10
Aroclor-1242	53469-21-9	0.10
Aroclor-1248	12672-29-6	0.10
Aroclor-1254	11097-69-1	0.10
Aroclor-1260	11096-82-5	0.10

() Values in parentheses are estimates.
Actual values are being determined at this time.

Note: Limits are for reagent water.

TABLE C (Cont.)
SAS DRINKING WATER
INORGANIC DETECTION LIMITS

PARAMETER	PROCEDURE	DETECTION LIMIT
Aluminum	ICP	100
Antimony	GFAA	5
Arsenic	GFAA	5
Barium	ICP	50
Beryllium	ICP	5
Cadmium	GFAA	0.5
Calcium	ICP	1000
Chromium	ICP	10
Cobalt	ICP	10
Copper	ICP	10
Iron	ICP	100
Lead	GFAA	2
Magnesium	ICP	1000
Manganese	ICP	10
Mercury	Cold Vapor	0.2
Nickel	ICP	20
Potassium	ICP	2000
Selenium	GFAA	2
Silver	ICP	5
Sodium	ICP	1000
Thallium	GFAA	2
Tin	ICP	40
Vanadium	ICP	10
Zinc	ICP	20
Cyanide	Colorimetric	10

Note: The above list may or may not contain compounds that are routinely analyzed at CRL for low level detection limits for drinking water.

See inorganic Routine Analytical Services (RAS) for related CAS #.

APPENDIX E

WELL LOGS OF THE AREA OF THE SITE

Geologic Formations Kind, Color, Hard or Soft	Depth in Feet		Geologic Formations Kind, Color, Hard or Soft	Depth in Feet	
	From	To		From	To
top soil	0	1'	134-33-34 ADCBFC		
sand	1'	30'	Elev. 1292#5		
hard clay (red)	30'	62'	214-A		
mixed gravel	62'	84'			
A - 0112			1208		
			<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">LOCATED BY</p> <p>1 - <input type="checkbox"/> Address Verification</p> <p>2 - <input type="checkbox"/> Name on Mailbox</p> <p>3 - <input type="checkbox"/> Lot-Block</p> <p>4 - <input type="checkbox"/> Plat Book</p> <p>5 - <input type="checkbox"/> Info. From Owner</p> <p>6 - <input type="checkbox"/> Info. From Neighbor</p> <p>7 - <input checked="" type="checkbox"/> Other <u>field verification</u></p> <p><input type="checkbox"/> Can't Locate State Why</p> </div>		

Township Range Section
34 **33** **35**

Distance and Direction from Road Intersections or Street Address and City of Well Location

1. PROPERTY OWNER'S NAME
Richard Ottens
 Address **45 I**
Staples, Minnesota

Show exact location of well in section grid with "X" Sketch map of well location.

Section Grid (12x12) with "X" at intersection of Row 10, Column 10.

Section Number: **34-33-35**
 Block Number: **6**
 Lot Number: **1**

2. WELL DEPTH (feet)
214

3. WELL TYPE
☒ Artesian ☐ Cased ☐ Drilled ☐ Dug ☐ Other

FORMATION	COLOR	THICKNESS OF FORMATION	FROM	TO
Clay	Dark	10	0	10
Clay	Dark	10	10	20
Dark & Clay		10	20	30
Clay	Dark	10	30	40
DRILLED TO 70'				
COMPLETED 59'				
134-33-35 BCD DDA				
Elev. 1293 ± 5				
214-A				
A-GRN				

4. WATER QUALITY
☐ Good ☐ Fair ☐ Poor ☐ Very Poor

5. WATER QUANTITY
☐ Good ☐ Fair ☐ Poor ☐ Very Poor

LOCATED BY

1. ☐ Address Verification

2. ☐ Name on Map

3. ☐ Direct

4. ☐ From Owner

5. ☐ Info. From Neighbor

6. ☐ Other

7. ☐ Can't Locate

6. REMARKS

7. REMARKS

8. REMARKS

9. REMARKS

10. REMARKS

11. REMARKS

12. REMARKS

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14. REMARKS

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46. REMARKS

47. REMARKS

48. REMARKS

49. REMARKS

50. REMARKS

108

WELL LOG #3

Todd Co

226148

WAL

Bid Proposal
for well on
Staples Industrial Park

Test well

SAME AS one of
AAmots test hol.

Log of test hole by Annot Well Drilling Co.
Driller Duane Kingsley - 10-21-70

0' - 28' Fine Sand ----- Water table approximately 3.0'

Wadens Co

28' - 35' Grey Clay

35' - 46' Gravel & Sand (possibly best aquifer)

46' - 58' Sandy Clay

58' - 156' Hard Pan

156' - 203' Clay Grey and Sandy

Kc 203' - 209' Shale & decomposed Granite 1078

1072 209' - 212' Granite

134-33-35 ACCCBA
Elev. 1281.5
214-A

No

LOCATED BY	
1. <input type="checkbox"/>	Address Verification
2. <input type="checkbox"/>	Name on Mailbox
3. <input type="checkbox"/>	Lot-Block
4. <input type="checkbox"/>	Plat Book
5. <input type="checkbox"/>	Info. From Owner
6. <input type="checkbox"/>	Info. From Neighbor
7. <input checked="" type="checkbox"/>	Other <u>city engineers</u>
<input type="checkbox"/>	Can't Locate State Why

Be located on center @ 203'
Borok - KRET

open from KRET - PCCR

1. LOCATION OF WELL

STATE OF MINNESOTA

DEPARTMENT OF HEALTH

MINNESOTA UNIQUE WELL NO.

for Water Sample

WELL LOG #4

130322

County Name

Wadena

Township Name

Township Number

134

Range Number

23

Section No.

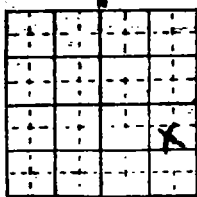
36

Practice

SE NE

Distance and Direction from Road Intersections or Street Address and Circle Well Location

Show exact location of well in section grid with "X."



Additional Name:
Block Number:
Lot Number:

NIP plotted at DD on Hans Borstad property

Sketch map of well location

2. PROPERTY OWNER'S NAME

Address: Hans Borstad 226 NE 4th St. 48 I

3. WELL DEPTH

4. WELL DEPTH (ft.)
5. WELL DEPTH (ft.)
6. WELL DEPTH (ft.)
7. WELL DEPTH (ft.)
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FORMATION LOG

Clay	Brown	Med	0 S
Clay	Gray	Med	5 45
Fine Sand	Powd	Soft	4 1/2
			118
			134-33-36A DC BBA
			Elev. 1243.5
A-QBAA			214-A

LOCATED BY

- ☐ Address Verification
- ☐ Name on Map
- ☐ Lot Block
- ☐ Plat Book
- ☒ Info. From Owner
- ☐ Info. From Neighbor
- ☐ Other
- ☐ Can't Locate State Why

13. REMARKS, ELEVATION, SOURCE OF DATA, etc.

Aug'd out previous well, on form # 125667 - dated 5-10-16.

1. LOCATION OF WELL					3. PROPERTY OWNER'S NAME	
County Name	Fraction	Section Number	Township Number	Range Number	Address	
Wadena	36	134	33	33	47 I Staples, Minn. 56479	
Distance and Direction from Road Intersections or Street Address and City of Well Location					4. WELL DEPTH (completed)	
Show exact location of well in section grid with "X".					50 n.	
Sketch map of well location.					Date of Completion	
1 mi. at 134-33-36 ADCCBC Elev. 1246±5 214-A					5-11-76	
2. FORMATION LOG					5. USE	
FORMATION LOG					1 <input checked="" type="checkbox"/> Domestic 4 <input type="checkbox"/> Public Supply 7 <input type="checkbox"/> Driven 10 <input type="checkbox"/> Dog	
COLOR					2 <input type="checkbox"/> Irrigation 8 <input type="checkbox"/> Air 9 <input type="checkbox"/> Bored 11 <input type="checkbox"/>	
HARDNESS OF FORMATION					3 <input type="checkbox"/> Rotary 6 <input type="checkbox"/> Jetted 9 <input type="checkbox"/> Power Auger	
FROM					6. USE	
TO					1 <input checked="" type="checkbox"/> Domestic 4 <input type="checkbox"/> Public Supply 7 <input type="checkbox"/> Driven 10 <input type="checkbox"/> Dog	
Clay Med 0 12					2 <input type="checkbox"/> Irrigation 8 <input type="checkbox"/> Air 9 <input type="checkbox"/> Bored 11 <input type="checkbox"/>	
Clay Med 13 42					3 <input type="checkbox"/> Test Well 6 <input type="checkbox"/>	
Fine Sand Gray Soft 45 50					7. CASTING DIAM.	
A - QBAA					Threading <input checked="" type="checkbox"/> 1 Welded <input type="checkbox"/> 2	
1196					Black <input checked="" type="checkbox"/> 42	
					4 in. to 42 ft. depth	
					Weight 10.89 lbs./ft.	
					8' in. to 50 ft. depth	
					Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
					8. SCREEN	
					Johnson	
					Type Stainless Steel	
					Slot/Screen .012	
					Set between 42 ft. and 50 ft.	
					Fittings: K-Hecker	
					9. STATIC WATER LEVEL	
					10 ft. below <input checked="" type="checkbox"/> above <input type="checkbox"/> Date Measured 5-11-76	
					10. PUMPING LEVEL (below land surface)	
					2 ft. after 1 hrs. pumping 7 g.p.m.	
					ft. after hrs. pumping g.p.m.	
					11. WELL HEAD COMPLETION	
					1 <input type="checkbox"/> Pitless adapter 2 <input type="checkbox"/> Basement offset 3 <input checked="" type="checkbox"/> At least 12" above grade	
					12. Well grouted?	
					1 <input type="checkbox"/> Yes 2 <input checked="" type="checkbox"/> No	
					1 <input type="checkbox"/> Heat cement 2 <input type="checkbox"/> Bentonite 3 <input type="checkbox"/>	
					Depth: from ft. to ft.	
					from ft. to ft.	
					13. Nearest source of possible contamination	
					ft. direction type	
					Well disinfected upon completion? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
					14. PUMP	
					Date installed	
					Not installed	
					Manufacturer's Name	
					Model Number HP Volts	
					Length of drop pipe ft. capacity g.p.m.	
					Material of drop pipe	
					Type: 1 <input type="checkbox"/> Submersible 2 <input type="checkbox"/> U.S. Turbine 3 <input type="checkbox"/> Reciprocating	
					2 <input type="checkbox"/> Jet 4 <input type="checkbox"/> Centrifugal 6 <input type="checkbox"/>	
					15. WATER WELL CONTRACTOR'S CERTIFICATION	
					This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.	
					North Star Well Drilling 4820	
					Licensee Business Name License No.	
					Box 23 Isle of Lake Superior 56479	
					Address	
					Signed 6/1/76 Date 6/1/76	
					Authorized Representative	
					Steve Nelson	

LOCATED BY

- ☐ Address Verification
- ☐ Name on Mailbox
- ☐ Lot/Block
- ☐ Plat Book
- ☐ Info. From Owner
- ☐ Info. From Neighbor
- ☒ Other P.O.
- ☐ Can't Locate State Why

5. REMARKS, ELEVATION, SOURCE OF DATA, etc.

Use a second sheet, if needed.

MINNESOTA GEOLOGICAL SURVEY COPY

STARLES -

WELL LOG

Aamot Well Drilling Co., Inc.

10. 12. 1950

Todd Co.
T. 133N
R. 33W
Sec. 1 NWWell Owner: Starles, J. L.Location: Starles, J. L. Administration Bldg.Date Completed: 10-2-50 Driller: Dieter Kung'wey

Depth	Description of Formation
0' to 25'	fine sand
25' to 35'	gray clay
35' to 55'	gray gravelly clay
55' to 75'	gray sand
75' to 113'	gray clay with sand streaks
113' to 137'	gray clay with red clay streaks
137' to 187'	granite slab
187' to 192'	black clay
192' to 194'	fine sand
194' to 200'	black clay

133-33-10000
E 12V. 1272±5
2140

SIZES AND MATERIALS USED

Top Casing Line: Inside Diameter _____ in. Wt. per ft. _____ lbs.

Depth _____ ft. _____ in.

Any Reduced Casing Sizes _____

Total Depth to bottom of Casing _____ ft. _____ in.

Total Depth to bottom of Well _____ ft. _____ in.

Depth measured from: _____ Water level: _____

Screened Well: Size of Screen: Diam. _____ in. Length _____ ft. Slot _____

Make of Screen _____ Metal _____

Fittings _____

Rock Well: Open Borehole _____ inches diam. _____ ft. deep below casing

Test data: _____ (gpm) _____ ft. drawdown. Pumped for _____ hrs.
(gph)

Test Pump: _____

Tot. Len. of Setting: _____

NOTES: _____

<input checked="" type="checkbox"/>	Correctly located
<input type="checkbox"/>	Correctly oriented
<input type="checkbox"/>	Correctly from Ne. point
<input type="checkbox"/>	Other _____
<input type="checkbox"/>	Correctly located Star _____

A - no aquifer
Depth to bedrock 200
Bedrock UREG1270
- 200
1070 shale

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

MASTER CARD

Record No. 133-33-2 Date 12-1-68 Map 5-1-68

County 2-1 (or town) 1

Latitude 46 20 25 N Longitude 094 49 34 Sequential number 1

Section 2 T. 33 S. R. 33 E. Sec. 1

Local well number 133 N 23 W 0 PC D Other number 5 & M

Local sec. HOSMER Owner or name SCHULLENZNER Address 133-33-2

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Water Dist P

Use of water: (A) Air cond, Bottling, Comm, De-water, Power, Fire, Dom, Irr, Med, Ind, P S, Rec, (B) (C) (D) (E) (F) (H) (I) (M) (N) (P) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) 133-33-2

Stock, Install, Un-used, Repressure, Recharge, Desal-P S, Desal-other, Other LOCATED BY

Use of (A) (D) (G) (H) (O) (P) (R) (T) (U) (W) (X) (Z) 133-33-2

1 Address Verification 2 Name on Mailbox 3 Lot-Block 4 Map Book 5 Info. From Owner 6 Info. From Neighbor 7 Other POST OFFICE

Can't Locate State Why 133-33-2

WELL-DESCRIPTION CARD

NAME AS ON MASTER CARD Depth well 58 ft Meas. 58 ft

Depth cased: 52 ft Casing type: STEEL ; Diam. 4 1/4 in

Finish: porous gravel w. horiz. open perf., screen, sd. pt., shored, open hole, other 5

Method: (A) (B) (C) (D) (H) (J) (P) (R) (T) (V) (W) (Z) C

Drilled: air bored, cable, dug, hvd jetted, rot., percussion, rotary, reverse trenching, driven, drive wash, other

Date 9-3-4 Pump intake setting: 2140 ft

Driller: HOSMER name (L) (M) (P) (R) (S) (T) (Z) address 133-33-2

Lift (type): (A) (B) (C) (J) multiple, multiple, none, piston, rot, submerg, turb, other Deep

Power (type): diesel, elec, gas, gasoline, hand, gas, wind; H.P. Trans. or meter no.

Descript. MP 1202 ft above LSD, Alt. MP 1202 ft below LSD, Alt. MP 1202 ft

Alt. LSD: 1202 ft Accuracy: 1202 ft

Water Level 1202 ft above MP; Ft below LSD 1202 ft Accuracy: 1202 ft

Date 9-3-4 Yield: 9 gpm Method determined

Drawdown: 1 ft Accuracy: 2 ft Pumping period 2 hrs

QUALITY OF WATER DATA: Iron ppm Sulfate ppm Chloride ppm Hard. ppm

Sp. Conduct 1 K x 10 Temp. 1 °F Date sampled 9-3-4

Taste, color, etc.

A - GGP UIF DU